THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS, 1670-1900: A SEARCH FOR SPATIAL REGULARITIES

By

DAVID CHARLES WEAVER

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For my most influential tutors,
my mother and my father.

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PREFACE

As its title suggests, the purpose of this study is to illuminate one aspect of the urban and regional economic development process. For reasons explained in the text, it has as its particular focus the spatial evolution of transportation networks along the south Atlantic seaboard of the United States in the nineteenth century. It has not been my intention to provide a detailed account of this area's various individual cities and their transport connections. Rather, I have attempted to concentrate attention on similarities within the evolving transportation pattern, and similarities between the study area and patterns recognized in other developing regions. Emphasis has been placed strictly on the spatial nature of the transportation process and the role played in that process by leading cities.

This emphasis seems justified by the lack of attention it has received in the past and by the large body of existing literature on related aspects of Southeastern economic development. No attempt has been made to consider systematically every road, canal, or railroad line produced in the Southeast, or every city which benefited from or influenced transportation development. Treatment

was invariably neglected where I felt diminishing returns were being achieved. The inquisitive reader may argue that ideally such a study ought to have included a more detailed examination of the complicated interactions between transportation activity and all pertinent social, economic, and political influences. To this suggestion I would plead only that limitations of time and talent compelled more modest objectives.

The discourse has been organized to reflect what I believe was the basic pattern of urban growth in the Southeast before 1900. Chapter 1 provides background information concerning the formulation and general treatment of the problem, and suggests a working hypothetical framework in which the development of Southeastern transport systems took place during the nineteenth century. Chapters 2 through 5 comprise substantive discussion of the actual events of transportation evolution during that period. Chapter 6 considers this inter-urban transportation sequence in overall regional pattern and perspective, while Chapter 7 compares the Georgia-Carolina sequence with the "model" sequences derived from similar research in other parts of the world.

Throughout the dissertation I have tried to focus upon projects as they were shaped by the complex combination of geographical conditions and corporate or community decision making. Wherever it seemed significant I have discussed possibilities and alternatives for develop-

ment which may have been ultimately neglected or rejected. By examining the motives as well as the magnitude and directions of transportation development, it is hoped that a fresh perspective has been thrown on the process of urban and regional development in the Southeast.

A wide variety of source materials is available. The most useful perhaps are scholarly works of professional social scientists. Early maps provide a number of insights, but they were found to be of varying quality, accuracy, and completeness. Some of the most informative maps form the basis for text figures 1-22. Rare and limited-edition books, maps, and monographs in the various state archives and university libraries of the region were invaluable in determining early and local developments. Specific mention should be made of the contributions of the Southern Historical Collection and the University Library at Chapel Hill, North Carolina, the Caroliniana Library of Columbia, South Carolina, and the Georgia State Archives in Atlanta, Georgia.

The way in which source materials have been employed, and their information handled, reflects my academic training and professional beliefs. Significant for this study is my feeling that that which can be measured quantitatively in studies of spatial systems is not necessarily of greatest importance to the understanding of the system, while that which is of greatest importance more often than not cannot be quantified. What is necessary,

I believe, is a method of research which combines reasonable rigor with sufficient flexibility to allow imaginative analysis. Rigor is a necessary aspect of scientific research allowing replication of study and promoting the comparability of results of analysis. However, the meaning of reasonable rigor and the methods for its achievement vary from discipline to discipline and even from project to project within a discipline.

In a geographic study such as this one, it seems that the best results can be obtained by 1) developing sound questions which can be studied through library research, 2) pursuing the necessary library research in a manner designed to elicit information in the greatest possible depth from the widest range of sources available, 3) formulating propositions that best test ideas raised at the outset of the study, and 4) finally developing or refining hypotheses that best explain the propositions in the light of the available data and permit some level of generalization. The purpose of generalization here is not seen to be the prediction of future economic action, but the development of reasonably sound probability concepts that can be applied to the consideration of behavioral possibilities in a similar economic system.

Also of importance, with regard to research procedure, has been my concept of the aims and functions of various types of geographic research. Undoubtedly the central task of geography is the exploration of the spatial

aspects of man's changing environment with maximum precision and to maximum depth in order to make known its character and content to mankind. This task is central because all other tasks of geographic research (such as scientific generalization about social phenomena or interpretation of their meaning for purposes of taking action) flow from this basic exploration function. The historical context in which geographic research has developed offers testimony to this statement.

The questions that demand the attention of geographic research, however, are manifold. They range from theoretical enquiry to the entire problem of conservation and change, and to more practical questions concerning the wise management of change in specific contexts. As already suggested the main objective of this study is the testing and refinement of existing theory. For the most part, the facts necessary for this procedure have already been established and presented by others. What is attempted here is the marshaling of these facts along different lines from those which have gone before. As a result, the research has relied largely on secondary sources. This may disconcert purists among the "historical geography" fraternity but is justifiable within the scope of this analysis. Although true "field work" played a minimal role in the investigation, extensive travel experience in Georgia and the Carolinas was utilized in the interpretation of old maps.

The basic operating ideas and structure of the study were worked out during a year spent in the Department of Geography at the University of Florida. There I gained not only the time and financial support to do most of the research but also the wise and generous counsel of the professional staff. Particular thanks are due to Dr. James R. Anderson, Dr. John R. Dunkle, and Dr. Clayton C. Curtis. Their instruction and advice over a longer period stimulated much of what is valuable in this study. For the completion of the volume I owe more debts, intellectual and otherwise, than can possibly be repaid by a brief printed recognition, but the contributions of preceding historians of the Southeast must be mentioned. In particular, the research labors of Ulrich Phillips, John Stover, and Cecil Brown considerably lessened mine.

I am indebted to Sharon White for expertly typing the final copy, to Fran Smith for proofreading, and to Frank Winstead who willingly labored with the camera when he was under great pressure to employ himself otherwise. Marion Hemperley expedited the map acquisition process and reduced its cost. My wife, Jan, deserves special acknowledgement for competently handling a variety of details. In closing I will add that those who have known me longest will inevitably look beyond academic rationale for the reasons why railroads cross so many of the pages that follow.

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By

David Charles Weaver

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This study attempts to interpret the process of urban development in the Southeastern United States from a geographic perspective. It investigates the spatial dimensions of transport expansion in Georgia and the Carolinas from the earliest European settlement to the end of the nineteenth century. The main theme of the study is that economic activities evidence certain spatial regularities and, no matter how self-contained they may be, are part of a larger economic system comprised not only of points in space but also of a particular segment of time.

The study is organized according to the author's belief that the most appropriate framework available for analysis of the role of areal differentiation in an evolving system of cities is that of "sequent occupance." Four phases in the evolution of transport facilities in Georgia and the Carolinas are recognized: 1) an initial period of minor improvements, 2) an era of river and canal projects, 3) a time dominated by the short-haul railroads, and 4) a final period when the long-haul or trunk-line railroads were assembled.

Five chapters explore in some detail the relationship between the general rate of expansion of the population in Georgia and the Carolinas, the locational dimensions of that growth, and the evolution of the transport network. It becomes clear from the evidence that, while such relationships are both spatially and temporally complicated, broad regularities of pattern and process do exist. The three strings of cities -- at the coastline, the Fall Line, and the mountain line -- and their successive periods of dominance provide one example of such regularities. The realignment of traffic flows from lines perpendicular to the coast to lines parallel to the coast, and the shift from short-haul traffic to long-haul traffic on the railroads are others.

In the final part of the work, the Georgia-Carolina transport sequence is compared with a number of other sequences established in various parts of the world,

particularly those of Taaffe, Morrill, and Gould in West Africa and of Lachene in France. Discussion of the Georgia-Carolina transport sequence in terms of the Taaffe postulates suggests that the precise transport sequence proposed by Taaffe and associates is not universally relevant with respect to developing areas. There appear to be three reasons why the Taaffe model is not representative of all colonial situations. One relates to the scale of the various areas in which the transport sequence has been studied. A second derives from the varying lengths of time over which the colonial process has operated. The third concerns the differing nature of the colonial process from place to place.

The basic difference between the Lachene and the Georgia-Carolina sequences lies in the initial environment considered rather than in the mechanisms of network growth. When certain structural differences are reconciled, the similarities between the Georgia-Carolina and the Lachene sequences are more striking than their contradictions. In fact Lachene's summary of development in France could, after the coast settlement period, substitute almost verbatim for the evolution of the Georgia-Carolina network.

CHAPTER 1

INTRODUCTION: THE TRANSPORT EXPANSION SEQUENCE OF GEORGIA AND THE CAROLINAS AS A PROBLEM

Introduction

One of the greatest present challenges to social scientists is to adequately explain why, when, where, or how urban communities develop. This challenge has gained prominence due to the metropolitan propensity of a burgeoning world population, which has intensified long existing problems of overcrowding, transportation, race relations, air pollution, water supply, public welfare, and the government of large and dense populations. The rapid compounding of these problems in recent years has served to attract a flood of academic and professional effort into the realm of urban studies and particularly into the study of the process of urbanization.

It has commonly been assumed by scholars that urban places in North America have developed in response to basic universal factors such as the productivity of agriculture, the development of commerce and transportation, and the growth of manufacturing in association with the

resources of particular localities. The growth of cities in the United States is thus viewed as no different to that in other major world areas (Lampard, 1954). In a very general sense these assumptions may be valid, but Perloff (1960) and his associates have shown that economic growth and urban development have exhibited widely different rates and styles of progress in various sections of the country over time.

In simple terms of general factors of urbanization, the growth process of urban places in any part of the nation presents no particular problem, but in the context of local and regional economic inputs, the various sections begin to take on quite independent identities, both in the present and in the past. In terms of its individual urban forms and their distribution, for example, the Southeast of the United States has certain characteristics which distinguish it from other systems both intranational and international. A first difference is the lower number of major urban centers in the Southeast compared to the Northeast or Midwest. A second difference lies in the main functions of cities in the Southeast, and a third difference is reflected in the rate of growth of the Southeastern urban system compared to that of other sections (Heberle, 1954). It has frequently been noted that the Southeast, which was among the first of the nation's areas to be settled, long lagged in urban development (Smith, 1954, 35).

When these regional differences in the urban pattern are recognized, very real problems in the understanding of urban growth dynamics arise. Such questions focus on the relative significance of the general factors of urbanization in the differing regions and the nature of the variety of geographic patterns. Important questions of this kind, concerning when and where the Southeast's urban centers emerged and what governed their rates of growth, have never been comprehensively analyzed. The same is true, to a large extent, of other areas. Pred has written:

> The pressing character of [urban] problems has forced most concerned economists, political scientists, geographers, regional scientists, and atmospheric and hydrologic specialists to use the present as a cornerstone in the formulation of future projects, ameliorations, and solutions. Although foresight requires hindsight, lay and scholarly preoccupation with quick answers to pragmatic questions has tended to obscure the need for a more profound comprehension of past processes of U.S. urban evolution (Pred, 1966, 1).

The Problem of Urban Development in the South

No area of the United States has received more attention in terms of its general historical evolution than the Southeast. Literature on the subject is voluminous and continues to be amassed. Such topics as the colonial occupation, the Civil War, and the New South provide, as they have traditionally done, fertile fields for historical scholarship. The focus of analysis in these studies,

however, is placed almost entirely on basic social and political themes. Such subjects as slavery, the plantation, the Confederacy, and the lives of prominent political leaders have an important position in the history of Southeastern regional development, but their further study does not seem to promise sufficient explanation of those profound economic changes which have characterized the Southeast in the last century.

By comparison, relatively little attention has been devoted to the Southeast's economic development, even though historians stress the importance of changing economic patterns in explaining the emergence of new political or social patterns. The actual process of economic development has been particularly ignored. The main reason for this seems to be one of purpose. Generally, historians of the Southeast have been interested in economic development not as a problem in itself, but rather for the light which it sheds on certain significant changes in other aspects of Southeastern society. Thus, the general impact of economic activity is deemed important and given proper consideration, while the process by which it occurred remains outside the pale of most investigations. It seems time to question this durable set of priorities and to ask whether their heavy emphasis is entirely warranted.

The whole idea of a "Changing South" is, at heart, an economic concept referring to the gradual movement of a region away from a staple crop economy toward a more

diversified urban-industrial economy. The social, political, and intellectual ramifications of this transition were immense and permeated every aspect of Southern life. For that reason the process of urban-industrial development could not help but exert a shaping influence especially since its basic assumptions and effects often ran counter to Southern tradition. The continuous interaction between the processes of urbanization and the structures of a fundamentally agrarian society, if examined closely, can tell us a great deal about the complex adjustments made by the Southeast on its way to the twentieth century.

There are a number of ways of analyzing the process of urban economic development. Among the most significant are (1) the economist's consideration of changes in supply and demand with respect to resources, (2) the business historian's idea of the individual entrepreneur as the conditioner of economic activity, (3) the urban historian's view of the growing city as a microcosm of the regional economy, and (4) the geographer's concept of inter-urban relationships along trade and transportation networks as the main arbiters of economic change. The object of this study is to try to interpret the process of Southeastern urban development from a geographic perspective.

Previous Urban Location Research

Geographers have long been intrigued by the spatial arrangement of cities on the earth's surface. Ideas concerning the factors which are responsible for the size and spacing of cities have stemmed mainly from the works of four men: Thunen (1826), Christaller (1966), Losch (1954), and Isard (1956). Thunen's celebrated model of differentiation in the cultivation of land areas, postulated a uniformly flat plain with soil of equal fertility at all points. At the center of the plain was a town having uniform transportation potential in all directions. Under such conditions, transport costs on farm produce were proportional to weight and distance, hence farm productions were distributed around the town in a pattern of concentric zones in accordance with the respective price and transport costs of each product cultivated. Given the demand of the town, the loci of different productions were determined by a combination of the effort involved in moving produce over unit distances to market, and the intensity at which each unit area would yield the requisite output subject to diminishing returns. Thunen showed that the controlling factor in the determination of land use is economic rent, and that agricultural market centers are located in terms of accessibility to their hinterland.

Christaller's classic model for the distribution of urban places was advanced almost a century later than

Thunen's, in 1933 (Christaller, 1966). It comprised an intricate and aesthetically appealing geometric system of hexagonal city-hinterland networks with specified interstitial distances. The distances varied according to the position of the city in the urban hierarchy of function and size. The fundamental assumptions derived from Thunen are that a rural area supports a town, which in turn services the rural area, and that there is a strong correlation between town size and area served (small town, small area; large town, large area). Christaller never claimed that his system exactly reproduced an existing urban network, advancing it instead as a theoretical model designed to explain the location of cities of various sizes on a regular, although not completely featureless, plain.

August Losch modified Christaller's theory with what has become known as the "Losch system": market areas of various sizes, each encircling a market center of corresponding population. To Losch, the patterning of urban centers and population density was a part of an economic nexus made up of price gradients, division of labor, trade areas, and other factors contributing to regional equilibrium.

> As towns are essentially agglomerations of locations of economic activity the system of town locations is defined simultaneously by the general equations of location and the geometry of economic regions (Losch, 1954, 84).

Losch avoided Christaller's assumptions that there are a certain number of cities of each size, that they are

evenly spaced, and that the tributary regions for all cities of a given size have the same area and shape. Losch did assume a network of cities classifiable by size and area of hinterland but he preferred not to presuppose a certain set of distances and populations; rather, he examined each area carefully to ascertain the actual distances and population sizes in each case. Losch's systems did not exhibit the same rigid geometrical patterns proposed by Christaller, and this resulted in a greater acceptance of Losch's hierarchical network. Losch did, however, verify Christaller's hexagonally-shaped complementary region as the most accurate pattern where purchasing power is uniformly distributed.

Walter Isard continued the work of Losch in attempting to set up a theory interrelating industrial location, market areas, land use, trade, and urban structure. Isard conceived the theory of location as embracing the total spatial array of economic activities, with attention paid to the geographic distribution of inputs and outputs and the geographic variations in prices and costs. Isard's work, like that of a great many other contemporary regional scientists, is a far cry from the relatively simple concepts of Thunen. Analysis of the prospective flows of commodities or capital, from each territorial economic unit to another, produces a highly convoluted web of quantitative relations demanding intricate arithmetic and, preferably, a digital computer (a tool which Thunen could hardly have visualized).

In the work of both men, however, as in the work of scores of others who have extended their ideas, there is much common ground. In all situations transport routes and distances and their associated costs were found to be fundamental to the territorial patterning of productive activities. While successive accomodations to reality have modified the neat regularity of the Thunian and Christallerian order (the distorting influence of scale economics in transport for example), the decisive role of transport lines and distances in shaping the spatial order has never been compromised. The initial market town on the plain made it possible to derive other lesser clusters (of specialized non-agricultural activity) and a rudimentary system of interaction and dependence between partially differentiated land areas and their nodal centers.

Despite their undoubted significance for the development of geographic thought, the practical value of these theories has been questioned. Many geographers and economists have attempted to test the validity of the theories by examining empirical evidence of actual town-spacings. Such testing has shown that actual spatial patterns do not, in general, conform closely to theoretical expectation. Harvey has observed that

> The difficulty of finding empirical evidence for central place theory has proved a major dilemma in urban geography, given the generally acknowledged importance of the theory in geographic thinking (Harvey, 1969, 138).

He maintains that central place theory "will not and cannot

yield empirically testable hypotheses since it is founded on a theory of demand which is itself inherently untestable," and suggests that the only alternative "is to regard settlement location as an economic process to which non-economic processes contribute a 'noise' or 'error-term' element." (Harvey, 1969, 139.) An element which, he implies, is frequently substantial.

Another weakness of urban location research has been pointed out. It lacks, most commonly, a time dimension. This deficiency arises less from the lack of awareness of researchers than the difficulty of incorporating it into mathematical models. Both Christaller (1966, 84-85) and Losch (1954, 79) were clearly aware of the temporal element, and Isard admitted of his Location and the Space Economy

> As a matter of course, we must work within the setting of dynamic techniques and frameworks currently available. Since these are inadequate, a chief limitation of this volume is its inability to cope satisfactorily with the development process over time (Isard, 1956, viii).

The economic historian Lampard was more catholic in his accusation saying that:

> At virtually no point in the burgeoning urban regional literature, nor in the older strand of location analysis, do economists come to grips with the secular process of urbanization itself. This is the process, nevertheless, that, from a demographic standpoint, forms the points of population concentration. . . .To be sure, urban-regional and location economists have not been concerned with the evolution of city systems as such nor with the analysis of long run economic transformations (Lampard, 1968, 94).

In general, this criticism may be valid, but it is a sweeping statement, and it does tend to obscure the fact that, although the process of urban development has been neglected, it has not, as Lampard himself has shown, gone entirely unattended. The city as an evolutionary form has been studied in a variety of ancient, medieval, and modern settings. In most cases these studies have concerned individual cities, rather than regional urban patterns (Lampard, 1961). They have also been, according to Pred, "long on description and short on concepts relating to the city as a constantly evolving system." (Pred, 1966 B, 3.) This is particularly the case with that aspect of urban growth related to transportation development. The evolution of transport and communications networks has frequently been the topic of empirical geographic studies, but theoretical treatments are relatively rare.

One general model of the growth of regional transport networks and their embedded cities is that proposed by Taaffe, Morrill, and Gould (1963). From studies of seaboard situations in which colonial exploration proceeded inland from a coastal baseline, these workers identified a six-stage (four-phase) sequence of route development, which they called the ideal-typical sequence of transport expansion. The empirical base for the model was provided by Gould's (1960) study of the growth of the transport system in Ghana and other studies in Nigeria, East Africa, Brazil, and Malaya.

The relationship between transport expansion and the colonization process has been considered with reference to the ideal-typical model in a number of locations since 1963, but most generally in Africa, the main source of the Taaffe work (Burghardt, 1969; Hoyle, 1967; Ogunduna, 1970; Pred, 1966 A & 1966 B; Rimmer, 1967 A & 1967 B; Stanley, 1970). In general, the initially suggested pattern of development has been confirmed in later studies, albeit with some qualifications to be discussed later. All in all, the studies leave little doubt that the Taaffe model provides a useful summary of certain regularities in the growth of internal route systems in seaboard and adjacent areas.

Unfortunately too little has been done to really establish or disestablish the universality of the concept. Apart from the work of Burghardt and Pred, there has been no attempt to consider it in an American context or, apart from these and Rimmer's studies in Australasia, no attempt to consider it in detail outside of Africa. Haggett has summarized the problem succinctly by asking two questions: "(i) how far is it applicable outside West Africa in particular and colonial areas in general, and (ii) how far is the division into separate stages justified." (Haggett, 1965, 81.)

The South as a Potential Research Area

The U.S. Southeast would seem to provide an ideal location for further research on the validity of the Taaffe model. It is one of the few regions of the world in which the interaction between space-time, economic systems, and economic processes can be traced "from the beginning" with reasonable accuracy and within a manageable time span. There is detailed information about the development of the area from the days of the first Europeans, whose settlement has taken place within a span of three centuries, or less than ten generations. Scholars who study the area are thus given an unparalleled opportunity to develop a multidimensional analysis of a society from its first foundations, with a thoroughness that can be duplicated in few other parts of the world.

In terms of its international setting, the urban network of the Southeast is a recent phenomenon in comparison with other world systems even in the Americas. In Latin America, and much of Africa, many urban places can be traced back to pre-European times, and many have grown up from aboriginal villages. In Europe, many contemporary urban places have been locations of Roman, Celtic, and even prehistoric settlements. In the Southeast, however, few cities are located on the site of permanent aboriginal settlement (and even in those cases there is usually no actual continuity between the ancient and modern town).

Practically all cities in the Southeastern United States owe their existence to European colonization.

More precisely, urbanization in the Southeast occurred during those centuries of western history which saw the rise of modern capitalism. This is important because it simplifies the problem of analyzing the conditions and factors affecting urban growth in the region. The student is not confronted with a heterogeneous set of urban places, dating in part from feudal days, as is the case in Europe or Asia. Although the Southeast belongs distinctly to the modern period, however, it did not become a major focus of industrial capitalism; rather it remained, for a prolonged period, one of the agricultural provinces of the Euro-American economic system.

The region, as such, contained many of the attributes associated with a colonial economy: large estates or plantations, specialized crops produced over large areas for consumption in distant markets, and late development of secondary industries largely limited to the extraction and first-processing of products. In surveying the economy of the Southeast in the nineteenth century, it is hard to overlook the region's resemblance to more recent emerging and underdeveloped nations such as those of West Africa. The Southeast suffered from a monolithic and somewhat primitive staple economy that resisted diversification for decades. It lacked capital, skilled labor, technological know-how, and an entrepreneurial tradition, all im-

portant to the pattern of exploitation of resources. Defeat in war aggravated these difficulties and left the Southeast without credit or even an operating financial system. Emancipation and Reconstruction rendered the social and political atmosphere uncertain and unstable for a number of years and hindered economic progress in ways experienced by many modern nations. To what extent the economic development of the Southeast in the nineteenth century may prove helpful in explaining the problems and choices faced by modern nations is a controversial question. The most satisfactory answer to that question certainly lies in a fuller understanding of the process by which economic development took place.

Structure and Organization of the Study

This study of the transport expansion sequence in the Southeast has been organized in the belief that the most appropriate framework available for the historical analysis of the role of areal differentiation in an evolving system of cities is that of "sequent occupance," a concept first elaborated by Whittlesey (1929). This concept, originally applied to the cultural development process, is readily adopted to the study of economic development, since it is grounded in two views: (1) the transformation of human settlement patterns (the evolving system of cities in an area is one case) involves the emer-

gence and generation of novelty within the population system concerned, and (2) that whatever is emergent at any time depends upon what happened earlier. That is to say that increments of population and economic activity are distributed unevenly and non-randomly through territorial space with regard both to the inertia of inherited structures and the force of novel opportunities.

The main theme of this study is that economic activities, no matter how self-contained they may be, are part of a larger economic system comprised, not only of some points in space, but also of a particular segment of time. The importance to economic activities of what has been called "geo-history" by Knight (1950) becomes particularly evident when the external or objective influences on urban economic systems are considered. Such influences are the limited and directing factors shaping the range of possibilities for what has become known as "local decision making." As these local decisions are made, they have a cumulative effect which serves to make the later structures of the system a reflection of earlier investments.

In terms of simple analogy, the universal geology of spatial economies is such that there is some beginning in every economic order at the point where space and time are first linked in the life of a particular socio-economic system. The bedrock upon which the subsequent layers of human activity are deposited is located at the point where men first begin to function in a systematic relationship

to one another on a particular territory. The combined effects of that first linkage and the modification by later deposits of human activity, the upheavals of subsequent events, and the simple erosion of time provide the framework within which economic systems develop.

Every economic system has its own particular location in space and time. Consequently, every system rests upon its own geological base. The historical and spatial geology of each system plays a fundamental role in dictating the context in which the system must operate, the broad limits of its economic concerns, and the continuing character of the economic interaction within it. As Losch has said,

> If everything existed at the same time there would be no development. If everything existed in the same place there could be no particularity. Only space makes possible the particular which then unfolds in time. In economic affairs as in all other affairs, our ken is limited for acting intelligently.... Space creates us and protects us from this limitation (Losch, 1954, 508).

In this study, the point where space and time are first linked, where men first begin to function in a systematic relationship to each other, is the South Atlantic Seaboard of North America during its initial European colonization. The base line for development is the coastline, which provided the first landfall and was for many years the link in ship-to-shore communications and vice versa. With the Taaffe study as reference, four phases of transport expansion are postulated, beginning

with the scattering of small ports and ending with the emergence of trunk-line routes or main streets. These phases are viewed as coinciding broadly with four fairly distinct periods of internal improvement policy in the area: (1) an initial period of minor improvements, (2) an era of river and canal projects, (3) a time dominated by the short-haul railroads, and (4) a final period when the long-haul or trunk-line railroads were assembled.

Although actual dates have no absolute significance in this study, they do help to locate the topic in its broader temporal framework, the economic history of the United States. They also provide a more concrete schema for the four chapters which follow. Chapter 2 covers the period 1670-1775. The year 1670 saw the first permanent Carolina settlement, while 1775 was the first year of the revolution which removed the South from imperial economic restrictions. Chapter 3 is devoted to the years 1775 to 1830, the latter year marking the beginning of the railroad construction era in the Georgia-Carolina area and in the United States. Chapter 4 concerns the period 1830-1865 and Chapter 5 the years 1865-1900. Eighteen sixty-five marked the close of the Civil War and the beginning of Reconstruction and all that that set of events implied for Southeastern business and Southeastern business concepts. At the end of the nineteenth century, all the Southeastern states, with the exception of Florida, had built the great bulk of their eventual rail mileage. Also

by 1900, most of the major railroad systems of the twentieth century had appeared. The Southern Railway, the Louisville and Nashville, the Norfolk and Western, the Atlantic Coast Line, and the Seaboard Air Line were all in existence. The internal combustion engine had yet to make its real impact.

The focus of the investigation was placed upon Georgia and the Carolinas for three reasons. First, the study area had to be reduced to manageable proportions in terms of time available for the research effort. At the same time, the area is sufficiently large to make analysis meaningful. Thirdly, these states have a topographic cohesion which aids in consideration of their spatial systems. The selection of state boundaries to delimit the study area seems appropriate because so many of the decisions affecting internal improvements in the region were made within the political framework of individual states. The use of state boundaries as working terminal points for the investigation does not, as the analysis shows, indicate a lack of awareness of the extension of the systems under study beyond those boundaries. Certainly the results may have been more conclusive had all of Virginia and Alabama been included in the study, but what then of Florida and Mississippi, to say nothing of Kentucky and Tennessee, all of which had roles in the overall story. The terminal lines, like the terminal dates, are not viewed as absolutes, simply as necessary and rationalized conveniences.

The Topographic Setting

Before discussing the first years of development, it seems necessary to outline the character of the country which provided the stage for the various human activities investigated, and which will receive frequent reference. The precise role of physical factors in the course of Southeastern settlement remains a moot question. In any consideration of the Southeast's transportation system, however, these conditions become an indispensable starting point. The early country roads, the canals, and the railroads arose from a desire to supplement nature's passageways or to surmount the limitations she imposed. The contours of Southeastern relief shaped the alternative routes for commerce. The rivers flowing southeast to the Atlantic and southward to the Gulf were invaluable as a natural transportation system but had severe limitations. The navigable waters of the Atlantic rivers did not reach very far back into the hinterland. Like the rivers reaching the Gulf, they suffered from fluctuating water levels, snags, and other obstructions. The point at which Southeastern rivers ceased to be navigable has become known as the Fall Line -- extending roughly from Trenton, New Jersey to Selma, Alabama. There the coastal plain abruptly gives way to a ledge of granite running parallel to the mountains. Along this line all the major rivers have obstructing rapids.

The terrain between the Atlantic Seaboard and the Ohio River consists of several clearly demarcated zones. Along the coast of Georgia stretches an alluvial area of great fertility. Transportation in this area posed no problem to settlers, for an intricate network of shallow waterways reached potential deep-water ports. The coastal lowlands lay in the early years, however, in peculiar isolation from the interior because of the desolate pine barrens which stood inland from them. This sandy infertile region, broken only by the rivers, extended almost the entire length of the lowland.

The area beyond the pine barrens, the piedmont plain, dominated Southeastern economic activity. From Virginia to Alabama, it provided the heart of the Southeast's staple crop area. Unlike the western cotton belt which continued on into Texas, the eastern cotton belt suffered from a woefully-inadequate natural waterway network for transporting its lucrative crops. Northwest of the piedmont, the imposing Blue Ridge and Cumberland Mountains walled off the piedmont from the markets and supplies of the Northwest. Across the mountains and in the Cumberland and Shenandoah Valleys, as settlement penetrated, thriving crops of grain, livestock, tobacco, and other commodities searched vainly for easy access to the South. So too did the products of Kentucky and middle Tennessee, whose reliance upon the Ohio, Cumberland, and Mississippi Rivers was far from satisfactory (Hilliard, 1969, 474-480).

The rapid extension of the piedmont cotton belt, and the great influx of settlers into the region beyond the mountains, intensified the demand for cheap reliable transportation. The trend of the Southeastern economy toward specialization in staple crops further accentuated the need. In general, the interchange of commodities between the different topographic regions of the South ranged from difficult to impossible. At the center of the problem lay the cotton belt, sandwiched between the mountains and the pine barrens. U.B. Phillips described the planter's position:

> The problem was to send cotton to the coast and to get supplies from across the pine barrens, on the one hand, or the mountains, on the other. The first system was that of using as main stems the rivers which crossed the barrens, and supplementing them with a network of country roads radiating from the heads of navigation. As regards intercourse with the Northwest, the resort was either to caravans across the mountains or to the circuitous water route of the Mississippi, the Gulf, the Atlantic, and the Carolina and Georgia rivers. The eastern cotton belt confronted by far the most difficult transportation problem in the South; and not only the local planters, but all the world of commerce, were much concerned in its solution (Phillips, 1908, 2-3).

The way in which the trading centers responsible for organizing that "world of commerce," applied themselves to that "problem," is the main substance of the following chapters.

CHAPTER 2

THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS IN DETAIL, PART 1, 1670-1775

Introduction

From the very beginning of colonization in North America, the various forms of British government encouraged settlers to organize towns and arrange their farming and other extractive industries around these towns (Trewartha, 1946). The imperial rulers saw many advantages to themselves in fostering the dependence of colonial Americans on towns. In the view of these rulers, the American colonies were, like all other colonies, sources of British wealth and sources also of administrative problems. Colonies were supposed to function so as to profit the empire, or at least to profit the relatively small group which ran the Empire -- and for this purpose they had to be tightly controlled (Glaab and Brown, 1967, 1).

This task of control could best be carried out if colonial economic life was channeled through a limited number of focal points. At these points the imperial authorities could regulate trade and check illicit busi-

nesses. So they required the laying out and chartering of towns in the American possessions (Glaab and Brown, 1967, 2). The Proprietors of the Carolinas demanded that each rivermouth should have a port to control the trade of the river and were responsible for interior township schemes as a means of frontier expansion. Towns were also viewed as the most easily defended settlement form in an alien land, where both Indians and Spaniards were direct threats.

Even without imperial directives, the establishment of towns would have probably been an immediate consequence of colonial expansion. The civilization which had shaped the colonists, and which they represented when they reached the shore of the wilderness, was far past the stage where subsistence agriculture could play any significant part in it. The Carolina pioneers came from European areas where political, social, and economic life depended upon connections and interactions which focused on capital and provincial cities. In these cities goods were processed and exchanged, wealth accumulated, power resided, and the major decisions affecting the economy were made (Bridenbaugh, 1938, 26-54).

Certainly in their American enterprise, the colonists began with towns or at least incipient towns. These towns served as central market places, as religious centers, as defense sites, and as centers of political organization and control. The towns were essential to colonial life from the beginning. They were not, in the very early days,

called into being by a previous development of farming. Rather, they constituted the bases for which agriculture and other activities like the fur trade could penetrate the interior without losing connection with supply lines and markets in Europe and the Caribbean (Glaab and Brown, 1967, 3). In Georgia and the Carolinas the roots of urban expansion go back to the days of first permanent settlement.

The plan of settlement devised for Carolina was contained in a document known as the "Fundamental Constitutions," generally attributed to the man who promoted Carolina -- Antony Ashley Cooper (Brown, 1933, 156). Ashley Cooper had never been to America but he was convinced that the compact township society was responsible for the economic well-being of the people of New England and had provided them with greater security than they would have enjoyed in scattered settlements. The "Fundamental Constitutions" provided for the creation and incorporation of towns. According to several instructions, each colony was to contain at least one town divided into squares of not more than two acres, which were to be separated by streets. The inhabitants were required to reside in these small communities traveling to and from their outlying land holdings (Cheves, 1897, 93-117, 314-315).

Ashley's hopes for the New England way of life and a multitude of towns in Carolina never materialized. People generally took up land where they chose because, as

the years passed, it became increasingly difficult for the central government in Charlestown to exercise effective control over the people. This was especially true of those on the frontiers. The area of occupation quickly expanded outward as the population increased and by the end of the first half-century it stretched along the coast from near the Savannah River to Winyaw Bay. The inland penetration remained generally within the 35-mile limit set by the Proprietors (Lee, 1965, 59). People generally did not follow the plan of the "Fundamental Constitutions" but chose to settle on the banks of navigable streams which were the important means of transportation at a time when roads were few and crude. According to Craven, "the first settlers divided amongst themselves not so much the land as the water." (Craven, 1949, 350.) When the land on a stream was occupied, the frontier moved on to the next. The land between was left for those who came later. The result was a scattered and irregular pattern of settlement.

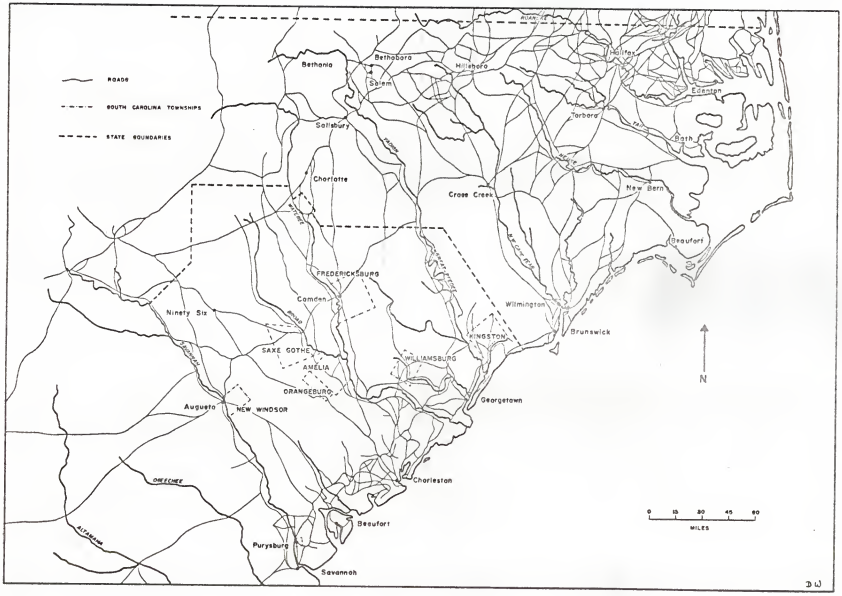
The urban centers which did develop were really only villages. Their most important single function was trade. The kind, amount, and direction of trade varied from place to place, but it was usually the dominant factor in a settlement's growth or decline. From the very beginning, these villages had a basic connection with transportation routes, marshaling and monitoring the flow of commodities from primary production areas to the extra-regional markets and from manufacturing centers to rural consumers.

In terms of the kinds of trade carried on in them, and their spatial location, the colonial Georgia-Carolina settlements can be assigned to one of three types. These were the seaports of the coast, the market towns of the piedmont agricultural areas, and an important third type of exchange centers which operated as inland river ports linking the seaports and the western towns by water and land routes.

The seaports were the main urban expressions of the colonial structure of the economy. Through them were funneled materials for export overseas and items imported for sale and distribution in the colonies. Most particularly the ports were "gateways" for trade between the colonies and the countries of Europe and the Caribbean. They were stations on the main Atlantic highway which circumnavigated the Bermuda High. Vessels leaving Europe sailed to North America in the Trade Winds, visited the Caribbean, then swung to the South Atlantic Coast of North America. As long as the age of sail lasted, Georgia-Carolina ports were in an ideal position to benefit from this navigational preference.

The flow of products which moved across the sounds and oceans facing the ports, and along the roads and rivers which fed into them conditioned urban growth. The ports realized this and did all in their power to expand their tributary areas. A variety of methods were used, including settlement promotion, transport improvements, and legal

Figure 1. Transportation routes in the Carolinas in 1775 (derived from Map, Mouzon, 1775).


ROADS
SOUTH CAROLINA TOWNSHIPS
STATE BOUNDARIES
Bethania
Bethabara
Salem
Salisbury
Charlotte
Hillsboro
Halifax
Edenton
Tarboro
Bath
New Bern
Beaufort
Cross Creek
FREDERICKSBURG
Camden
Ninety Six
SAXE GOTHE
AMELIA
ORANGEBURG
NEW WINDSOR
Augusta
Wilmington
KINGSTON
Brunswick
WILLIAMSBURG
Georgetown
Charleston
Beaufort
Purysburg
Savannah
OHEECHEE
ALTAMAHA
N
0 15 30 45 60
MILES

restraints on trade competition. These efforts were aided or hindered by locational attributes and by the inertia of early established trade routes. The result, by the end of the colonial period, was some sizeable differences in port populations and traffic.

The South Carolina Low Country

There were eleven identifiable seaports on the Georgia-Carolina coast by 1775 (Fig. 1). A number of others were established during the early days of settlement but never achieved any status. The three largest ports were Charlestown, South Carolina; Wilmington, North Carolina, and Savannah, Georgia. Of these three, Charlestown was the oldest and most important both in terms of the volume of its trade and the dimensions of its spheres of influence and interaction. First settled in 1670 and moved to its present location in 1680, Charlestown did not begin its period of rapid growth until the 1730's (Rogers, 1969, 7). It was, from its first foundation, however, the hub of British colonial exploitation in southeastern North America, and before the late eighteenth century it had no serious competitors on the whole stretch of coast from the St. Mary's River to Cape Hatteras.

Charlestown became a major center of the British Empire because it was established at a major crossroads of trade. This crossroads occurred at the junction of the

Southern fur trade with the main Atlantic Highway. During the early years of the seventeenth century, the fur trade had been pursued by the British from their Virginia settlements, west into the southern Appalachians, and southwest as far as the present state of Alabama (Craven, 1949, 372). The overland traffic was difficult and time-consuming and the fur traders became anxious to find a shorter route to their source areas. A point was selected as close to the Spanish base of St. Augustine as was considered prudent. The initial selection was a previous Spanish settlement, Port Royal, but it appeared unhealthy to the settlement expedition which landed instead at the mouth of the Ashley and Cooper Rivers, a little further north (Clowse, 1971, 23-24). This was an unfortunate choice in a sense, because neither the Ashley nor the Cooper were major rivers; but the period of interior-penetration by agriculturalists was some years away, and by that time Charlestown had built for itself an almost impregnable economic position on the coast.

The port was able to promote itself through its designation as the main agent of British government in the area, a role which included organizing and controlling settlement and trade. Charlestown's earliest years were its most threatened. Closely allied to their advocacy of towns was the Proprietors' determination that every navigable river should have its own port (Childs, 1940, 229). The foundation of Stuart's Town, near the site of old Port

Royal, in 1684, gave it a competitive position with respect to the Indian trade. Unfortunately for Stuart's Town, its attempts to control this trade led to a bitter controversy with Charlestown, which was much more powerful politically. Cooperation between Charlestown and Port Royal for defense was neglected, and this checked the growth of Stuart's Town and exposed it to Spanish attack. In 1686 Stuart's Town was razed by the Spanish and the first threat to Charlestown's hinterland was removed. The fur trade continued to remain in Charlestown's hands (Crane, 1956, 25-32).

The Proprietors also ordered a port to be built on the Edisto. This was founded and called London. In 1683, the Proprietors, having divided the then-settled area into Berkeley and Colleton counties, made Charlestown the seat of the former and London of the latter. They also ordered that land be set aside for another port north of Charlestown and declared that they intended the chief city of Carolina to be on the Coombahee River, south of the Edisto. Nothing came of these plans nor of the suggestion made in 1684 that Charlestown be moved further up the Cooper to be closer to the Indian trade. In February, 1685, the Proprietors proposed London as a healthy place to hold court during the malaria season, but as they only mentioned the town once after that it must have disappointed their expectations (Childs, 1940, 230). The Proprietors themselves largely destroyed whatever chance of success a rival port to

Charlestown may have had by requiring them to be as far from the sea as possible. The convenience to Indian traders could not have counterbalanced the annoyance to mariners.

The scheme might have worked if the settlers had quickly found an agricultural staple as profitable as tobacco in Virginia. It was years, however, before rice and indigo were produced in substantial quantities. As a result, there was little to attract ships into the rivers. The Indian trade covered such a diffuse area that it was best concentrated at a single point. Also, mosquitoes created much greater problems for interior than for coastal settlements. The "multiple port" ideal foundered on three peculiarities of the Low Country which the Proprietors did not at first understand: its topography, its economy, and its malaria (Childs, 1940, 321).

Throughout the first 50 years of the Colonial Period the Indian trade was the chief instrument of Charlestown's expansion (Bridenbaugh, 1938, 175-205). It was the fur trade, organized by the South Carolina Proprietors, which caused the first deep and sustained penetration of the interior by the Europeans and established the first major routeways leading inland from the coast (Childs, 1940, 231). In the earliest days the trading paths were merely aboriginal thoroughfares which the Indians or traders traveled with human loads of skins and trade goods. They next became traces for pack horse trains. Then, as the

Indians gradually moved west, the whites took possession of these familiar paths through the wilderness and made them into crude pioneer roads (Truett, 1935, 3-36).

Over time, five main routes emerged radiating from Charlestown to the major Indian settlements. From the port to the up country, traders generally followed water routes to the Fall Line where the great inland trading paths really began. Congaree, at the head of the Santee Swamp, 145 miles from Charlestown, became a focus of paths from the Catawba and the Cherokee. From there the Catawba path ran northwestward to Wateree Town on the Wateree River and along that stream to the Waxhaws and the Catawba, where it intersected the important Occaneechi Trading Path, which penetrated the uplands from Virginia (Map, Moseley, 1733; Fry and Jefferson, 1755).

The Congaree route to the Cherokee followed the southern margin of the Congaree watershed through Saluda Old Town and Ninety-Six and then crossed over the headwaters of the Savannah River (Map, Mouzon, 1775). From Dividing Paths near Apple Tree Creek, one path ran westward to the nearest of the Lower Towns of the Tugaloo River, the other to Keowee. From here mountain paths led through the Blue Ridge to the valley of the Tennessee via Unicoi and Rabun Gaps (Crane, 1929, 129).

Relations with the Creeks were much more important commercially than with the Catawba and Cherokee for Charlestown traders. As a result the three most important paths

ran to the west (Crane, 1956, 130-136). One of these thoroughfares is mentioned on old plats and maps as the "Upper Trading Path" or "Upper Trading Road," while the equally noted paralleling artery located further south is called the "Lower Creek Trading Path." The first trail is not so often referred to as the Upper Creek path because it was more than a passage to the Creeks. This route had at least one important branch to the Cherokees of northwest Georgia and northeast Alabama, and at the Coosa River it connected with important routes to the Chickasaws and Choctaws (Map in Goff, 1955 A, following page 4).

These two major paths joined near the Falls of the Savannah, where Savanna Town was founded in 1716, forming a single path which led along the south side of the Salkatchie River to Charlestown (Logan, 1859, 310-318). Westward they diverged to follow routes that generally ranged from 30 to 50 miles apart. The names were derived from the trails' geographic relationship to each other and not from the fact that they led respectively to the upper and lower segments of the Creek confederacy. Both passages eventually reached some important common destinations among the Creek Indians in what is now western Georgia and central Alabama. The two routes were arterial but in general they differed structurally in a diagrammatic sense. The Upper Trail, because of numerous major branchings assumed a dendritic pattern, whereas the Lower Path was more like a braided stream since it was not a single thoroughfare but

a series of entwined and alternating paths that ultimately reached common points. These paths are of particular significance to this study because of their influence upon later settlement patterns (Goff, 1955 A; 1955 B).

The fifth path was developed in the late seventeenth century but had fallen out of use by the mid-eighteenth. It ran from Charlestown to the lower Savannah and then southwestward to the lower Creek villages on the Chattahoochee, south of present day Columbus (May, Wright, 1763). It was of minor importance, compared to the northern routes, in the fur trade but did provide an early indication of one major direction which later transportation expansion was to take. These routes, focusing on Charlestown, gave it access to all parts of the Indian country, and at the same time gave the Indians access to the coast.

By 1716 suggestions were being made for protective settlements to be established as a first line of defense against possible Indian attacks. Twenty-one British merchants, owning land in South Carolina, presented in 1730 to the Lords of Trade a proposal for using funds originally intended to reduce the paper money of the colony, for the encouragement of poor settlers. The King agreed and instructed Charlestown to establish 11 townships of 20,000 acres each (Fig. 1). Two were to be on the Altamaha, two on the Savannah, two on the Santee, and one each on the Edisto, Wateree, Black, Peedee, and Waccamaw Rivers (Crane, 1956, 292-294). Under the scheme, which was a revival of

Ashley's initial settlement concept, each settler was to have 50 acres per head, white and black, and a lot in the town in the center of each township. As Georgia soon absorbed the Altamaha, only nine of the 11 originally ordered were established by South Carolina (Map, Mouzon, 1775).

By 1733 six of the townships had been laid off: Purrysburgh on the Great Yemassee Bluff on the Savannah about twenty-two miles in a direct line from the mouth of the river, Orangeburg comprising a narrow strip along the northern bank of the Edisto, Amelia comprising the area between Orangeburg township and the Congaree-Santee, Saxe Gotha comprising a good part of the present Lexington County below the Saluda, New Windsor at the Falls of the Savannah, Williamsburg comprising the middle of the northwestern part of the present Williamsburg County, Kingston within the present Horry, Queensborough a square on the southern side of the Great Peedee, and Fredericksburg east of the Wateree at Camden (Wallace, 1966, 147-151).

The primary reason for founding these townships, in the early 1730's, was defense against the Indians, and the pattern of township settlement reflected that need (Sirmans, 1966, 168). The surveyors selected sites on the major routeways to Charlestown (Fig. 1). Purrysburgh was set astride the coastal route across the lower Savannah; New Windsor guarded the western routes at the Falls of the Savannah; Orangeburg, Amelia, and Saxe Gotha controlled access on the Cherokee routes; while Fredericksburg,

situated at the Falls of the Wateree, stood on the road to the Catawbas. Williamsburg and Kingston lay, not on Indian routes, but on paths to the upper Peedee country.

Because they were not primarily chosen for their agricultural potential, several of these township sites proved disappointing to settlers. The colonists soon tired of the swampy region of the lower townships where the land was easy to defend but hard to cultivate. In spontaneous movements after 1750, they took to the hills above the Fall Line in large numbers. South Carolina's military preoccupation in selecting township sites made life harder for the immigrants, but it enhanced the value of the townships to the colony. Although Charlestown's efforts to artificially populate such unfavorable locations as Purrysburgh and Kingston met with scant success, and although population generally took the natural course that it would have taken without government interference, the amount of immigration was greatly stimulated. By means of its propaganda, its definition of township sites, and its financial aid, the government in Charlestown exercised a powerful influence on the nationality, location, and time of settlement of the lower and middle country. Out of the township scheme emerged four towns -- Columbia, Camden, Hamburg, and Orangeburg -- which were to have a prominent place in the later urban pattern.

The township scheme was important for other reasons. The increased protection afforded by the townships, along

with the Charlestown-supported establishment of Georgia in 1733 (as a barrier against the Spanish), and a simultaneous increase in the demand for rice, stimulated a surge of independent settlement along the coast and up the rivers. For the first time, the Carolina society began to assume a definite regional form -- expanding territorially, economically, and culturally (Bridenbaugh, 1952, 54-56).

The plantation country began to develop on either side of the Savannah River and in the Sea Islands as far as St. Simons; it also spread northward past the mouth of the Peedee after 1735. About this time too, newly arrived immigrants pushed inland from Charlestown, up the courses of the Santee and Edisto, and into the modern Richland County. Filling rapidly, these areas were regarded, by 1750, as part of the Low Country. The Sea Islands and the coastal lowlands were a region of sounds, inlets, rivers, and creeks sheltered and navigable for small boats in any season. These waterways led not directly to Europe, as in the Chesapeake, but to Charlestown (Rogers, 1969, 8). South Carolina's inland waterways did not have sufficient depth to permit ocean-going vessels to sail up to plantation wharves.

As settlement extended, the opening up of roads became one of the most important roles of government. Old trading paths were widened and some major new arteries were constructed -- in particular, the coast road from North

Carolina through Charlestown to Savannah (Fig. 1). By the 1770's a road had been constructed from Savannah to St. Augustine providing a land route from New England to Florida (Sellers, 1934, 16). All new roads simply consolidated Charlestown's position as the hub of the South Carolina economy. It was the largest urban center in the South, growing to about 14,000 by 1770, having developed every business facility needed to serve a rich agricultural hinterland.

By 1750 the leading exports from Charlestown were rice, indigo, and deerskins in that order of importance. The major import was slaves. Rice, of an inferior sort, was introduced into South Carolina during the last quarter of the seventeenth century; but rice growing was not profitable until the planters discovered that, although it could be grown on highlands, it matured best on the low rich soil of the estuarial swamps. Within the quarter-century after 1750, rice exports doubled, the growth being roughly proportional to the increase in the number of slaves. Just before the revolution, shipments of the crop averaged 70,000,000 pounds yearly with gross sales exceeding 100,000 pounds sterling (Sachs and Hogenboom, 1965, 39). Charlestown was the factorage center for all the rice plantations. Rice was cultivated mainly on the islands along the coast (later famous for the production of cotton), but an increasing amount came from the Back Country where farmers produced a better grade through more careful

attention (Sharrer, 1971). In 1774 and 1775 Charlestown exported more than a million pounds of indigo for the British cloth industry (Sellers, 1934, 166). Charlestown's wealth was also based on the slave trade, the supply of which passed, like most other merchandise, through the city's mercantile houses (Sachs and Hogenboom, 1965, 39). The economic pillar of early days, the fur trade declined steadily after 1750 due to the migration of the Indians and the competition of western centers (e.g. Mobile) (Hamilton, 1910, 140-145).

As interior settlement increased after 1750, an extensive wagon trade developed between the Back Country and Charlestown, based on exchanges of wheat, flour, and pork for manufactured goods (Sellers, 1934, 25-48; Bridenbaugh, 1955, 265). The city was the southern terminal of the Colonial Post which connected there with provincial and private routes of growing importance (Bridenbaugh, 1938, 361-362). As the capital of South Carolina, its military headquarters, and the sole seat of provincial justice before 1769, Charlestown was the absolute focus of the political and economic life of South Carolina. After 1763, Savannah, St. Augustine, Pensacola, and Mobile began to erode Charlestown's trade area, but, before 1775, their effect was small (Caldwell, 1941, 47).

Only two other ports of significance appeared in South Carolina during the colonial period, and they were developed with the approval of Charlestown, as her hand-

maidens. The English laws of trade required all imports and exports to pass through an official port of entry where customs officials were located to enforce the regulations. For more than half a century Charlestown was the only such port in South Carolina and the transportation of goods to and from the capital was a costly inconvenience to all except the merchants of the city. Potential ports existed from the earliest days at Winyaw Bay and Port Royal Sound, but many years passed before they were so designated, and Beaufort and Georgetown established (Lee, 1965, 59).

Beaufort was built close to the old Port Royal to service the Sea Islands around St. Helena Sound, and the lower Broad and Combahee Rivers. It was a replacement for the unfortunate Stuart's Town and, having no river access to the interior, served only a very limited coastal area. Georgetown, to the north of Charlestown, was established to assemble and distribute goods moving between Charlestown and the eastern townships. The only port on the 150 miles of coast between Charlestown and Wilmington, Georgetown seemed destined to become an important center of foreign, as well as coastwise, trade. Its surrounding rivers were navigable -- one of them, the Peedee, for as much as 120 miles from the ocean. Yet after some development during the colonial period, Georgetown grew only slowly (Sellers, 1934, 6). According to tradition, a shallow harbor and a shifting sand bar prevented the development of Georgetown's commerce (Drayton, 1802, 207-208). Easterby (1945, 9),

however, suggests that the stubborn resolve of Charlestown to control the trade of the southeastern coastal plain may be an additional, if not more important, factor. He cites the building of the Santee canal and Charlestown's dominance of the steamboat traffic of the Peedee as evidence. Whatever the reason, the vast bulk of Georgetown's traffic went via Charlestown.

The North Carolina Coast

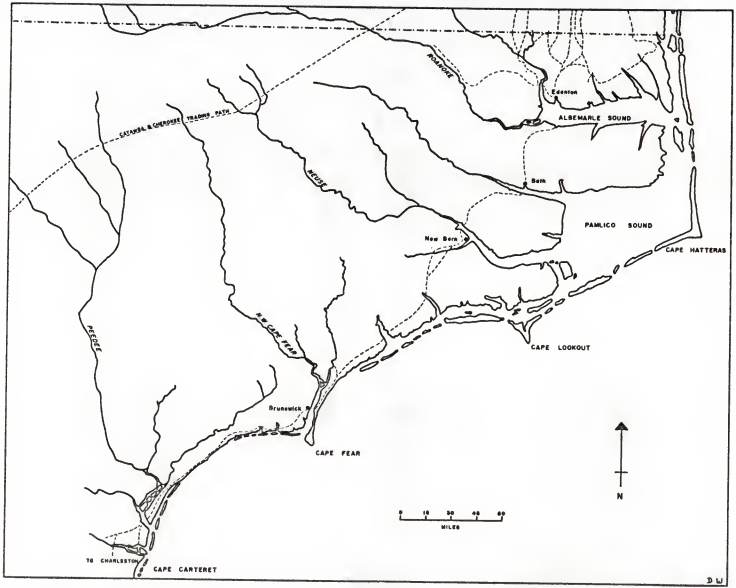
North Carolina's coast developed according to the same general pattern as South Carolina, but there were differences between the two that were largely the result of topographical variations (Wright, 1951, 266). North Carolina was fringed by a chain of offshore islands or sandbanks that were separated from the mainland by sounds of varying sizes. At irregular intervals inlets connected the sounds with the open sea, but none was of sufficient depth to accomodate large transoceanic vessels, except under extreme difficulties (Lemert, 1935, 298). Only at Cape Fear was there a potential overseas port, but in the early years this was beyond the settlement frontier, in land claimed by the Charlestown government. The lack of an adequate shipping center during the initial period not only retarded the economic development of North Carolina but also precluded the growth of a single dominant community like Charlestown, which might have become the focus of

a centralized government. The result was a system of local governments based on precincts.

Like the inhabitants of South Carolina in the early years, the people of North Carolina did not venture far from the coast and chose to settle on the banks of navigable streams. The result was an erratic movement of the frontier southward from Albemarle County on the Virginia border (Butler, 1971). With its small population spread out over a wide area, early North Carolina was almost entirely rural. There were, however, by 1733, several small villages in the province (Fig. 2) like Edenton, incorporated in 1722, which sometimes served as the seat of the provincial government though it was not officially designated the capital of the province. Bath, on the Pamlico River, was of sufficient importance, by 1705, to be incorporated, and, in 1710, New Bern was founded at the estuaries of the Neuse and the Trent. In 1723 Beaufort on Core Sound was incorporated. Brunswick and Wilmington were established in the Cape Fear district in 1725 and 1739 respectively.

Each of these towns was the political, economic, and cultural center of the area in which it was located, and all but New Bern were designated as ports of entry: Edenton for Port Roanoke, the Albemarle Sound region; Bath for Port Bath, the Pamlico area; Beaufort for Port Beaufort and the Neuse-Trent-Core Sound area; and Wilmington and Brunswick for Port Brunswick, the lower Cape Fear region

Figure 2. Transport routes in North Carolina in 1733 (derived from Map, Moseley, 1733).


CATAWBA & CHEROKEE TRADING PATH
ROANOKE
Edenton
ALBEMARLE SOUND
YADKIN
Bern
PAMLICO SOUND
New Bern
CAPE HATTERAS
PEEDEE
NEW CAPE FEAR
CAPE LOOKOUT
Brunswick R.
CAPE FEAR
N
0 10 20 40 60
MILES
TO CHARLESTON
CAPE CARTERET
D W

(Map in Merrens, 1964, 87). Port Currituck was established for the Currituck Sound area but it never had a designated place of entry (Lefler and Newsome, 1963, 99). The existence of these several ports facilitated shipping but the limitations of the harbors restricted them generally to the coastal and West Indian trade. The physical restrictions on shipping also resulted in a limited trade with the Indians which did extend beyond the tribes of the coastal plain. Some attempts to relieve these restrictions were made during the period but with little success (Crittenden, 1930, 438-440). That there were twice as many ports in North Carolina during the colonial years, as in South Carolina, was to some extent a reflection of a greater expanse of coastline. It was also a result of there being no early emergence of a single outstanding trade focus, as there was in South Carolina. In fact much of North Carolina's trade was dominated by Charlestown and the Virginia ports of Petersburg, Richmond, and Norfolk (Franklin, 1926; Gray 1933, 42). At no time during the Colonial Period did any one of North Carolina's ports contain more than a few hundred inhabitants; several had considerably less. The three largest, by 1775, were Edenton, New Bern, and Wilmington. The three other ports, Bath, Beaufort, and Brunswick were extremely small and declining in importance.

Edenton was located at the northwestern end of Albemarle Sound in the first developed area of North Carolina. The Albemarle region was settled overland from

Virginia and maintained strong ties with the Virginia ports, ties which Edenton was never able to sever (Clonts, 1926, 28). As settlement began to expand along the upper Roanoke after 1750, Edenton might have expected to benefit, but much of the produce was carried overland to Virginia markets or boated downriver past Edenton to Norfolk. Edenton was linked to both Virginia and to the more southerly ports of North Carolina by well-used roads. On the south side of the town was the northern terminus of the ferry that carried the main north-south coastal highway across Albemarle Sound and led on to New Bern, Wilmington, and Charlestown (Crittenden, 1931 D, 377). Several roads converged on the town from Virginia, giving Edenton closer ties to Virginia than any other North Carolina settlement. Neither land nor water routes sufficed to overcome the handicaps of disadvantageous location. As a port Edenton was an unusually time-consuming distance from the ocean, and was hampered because of its ferry connections to the south. With the shifting of the Colonial Post road to the west, and the establishment of better overland routes from the upper Roanoke to Norfolk, it stagnated (Merrens, 1964, 147-149).

By the end of the Colonial Period, New Bern had become a larger and more important port than Edenton. Founded in 1710 at the confluence of the Neuse and Trent Rivers, it remained insignificant until 1765, when its location midway between the Albemarle and the Cape Fear was

responsible for its selection as the site of the capital of the colony. As a capital it also attracted merchants, causing comment from the Governor on the way in which New Bern had grown at the expense of Beaufort, a smaller port to the southeast.

> The trade that was formerly carried on through the Channel [Beaufort] is now derived almost entirely from this town [New Bern] since it became the seat of government, which has promoted its growth exceedingly by inviting many considerable merchants to settle in it (Quoted by Merrens, 1964, 150).

Other factors aided New Bern's rise. Although it was far from the ocean, it was closer than its only real competitor, Bath, to the agricultural and timber areas of the lower Tar and Neuse valleys which became more prominent after 1750. Also, the roads built to aid access to the capital enabled New Bern's merchants to tap the interior. Goods were carried to New Bern for transfer to ocean going vessels, from large areas of eastern North Carolina during the Colonial Period (Dill, 1945; 1946).

A group of settlers from South Carolina founded Brunswick in 1725 (Randall, 1968, 441). It was located on the west bank of the Cape Fear about 12 miles from the mouth, just below a zone of sandbars called the Flats. Selection of the site was based upon the potential of the naval stores industry of the area. To earn a profit, the naval stores required shipment in vessels of 100 tons or more. Such large ships could not cross the Flats where water depth was only seven and one half feet. Within a

short time, North Carolina led the world in the production of naval stores, most of which were exported through Brunswick. Brunswick was remote, however, and after 1750 located too far from the settled area of the Cape Fear to really prosper. As the section above the confluence of the Cape Fear Rivers grew in population, agricultural products, along with lumber, other forest products, and furs, began moving down river for export.

It was this increasing flow of goods that prompted the establishment of Wilmington at the junction of the rivers (Merrens, 1964, 151). Not only did the site offer better harbor protection than Brunswick, accessible to all but the largest ships, but it provided easier access by the Cape Fear and North East Cape Fear Rivers to a much wider area than could be tapped from Brunswick. This was made clear in the act incorporating Wilmington in 1739, which said;

> Whereas several merchants, tradesmen, artificers and other persons of good substance have settled themselves at a village called Newton lying on the East branch of the Cape Fear River, and likewise, by reason of the depth of the water capable of receiving vessels of considerable burthen, safety of its roads beyond any other part of the river, and the secure and easy access from all parts of the different branches of the said river is upon all these and many other accounts more proper for being erected into a town or township than any other part of the said river (Quoted by Randall, 1968, 443).

The act also assured the pre-eminence of Wilmington by transferring port officials along with the clerk of the court and the county registrar, from Brunswick. Only one

real reason remained for the continued existence of Brunswick. The larger ships used in the naval stores trade continued to land there because the Flats prevented them going further upstream. In fact, prior to the revolution, Brunswick handled the major portion of the shipping tonnage that entered the river, while Wilmington received the greater number of vessels (Lee, 1952, 233). According to Merrens,

> Although the Cape Fear River was much utilized for trading purposes, road transportation was also of some consequence in the economic life of Brunswick. The main north-south coastal highway through the colony was extended as far south as the river almost as soon as settlers moved into the Cape Fear, and contemporary maps show that before long there were several roads converging on Wilmington. The court minutes of New Hanover County, of which Wilmington was the county seat, revealed the inhabitants' constant concern to maintain and improve the road system within the county, and particularly with those roads that linked up with others leading to more distant places (Merrens, 1964, 152).

Both Wilmington and the emerging piedmont communities pressured the colonial government into building a road from the western part of the colony all the way to Wilmington and Brunswick. The road was designed to help divert to these two North Carolina ports some of the produce of the Back Country that had previously been exported through South Carolina. The vigorous policy of trade with the interior, pushed by Wilmington merchants, expanded the hinterland of the port so that it included more of the Back Country than any other South Atlantic port, except for Charlestown, during the colonial period.

The other two seaports of North Carolina were Bath and Beaufort. Both were founded early in the eighteenth century, according to the principle of establishing numerous ports. Both were official ports of entry and both were county seats. But both of them, after an initial phase during which they stood out as two of the most important towns of the colony, dwindled into unimportance. Bath, founded in 1705, was the second town of the province in size in 1737 (Merrens, 1964, 154). It failed to develop extensively, because it was less appealing to traders than Edenton to the north and New Bern to the south. In an area that remained sparsely settled, without any particular advantages in terms of either location or accessibility, it was by-passed by the main north-south coastal highway which ran through New Bern.

Beaufort experienced a similar decline. Bath and all the other port towns were at least represented in the assembly and had some opportunity to influence the political process in their favor. Beaufort was not -- it was too small. When first established in the second decade of the eighteenth century, Beaufort was the only port close to the ocean. It was by-passed by the coastal road, however, and had an extremely limited hinterland. When New Bern began to flourish in the 1760's, Beaufort's decline was one of the consequences (Paul, 1970). Differential growth of ports in North Carolina during the Colonial Period was marked. As the colony expanded, the increasing need and

opportunity for marketing facilities led to a proliferation of merchants at the two best located ports, New Bern and Wilmington, and a concomitant reduction in the effective attraction of all the others (Merrens, 1964, 155).

Early Georgia

Of all the ports on the Carolina-Georgia coast in the eighteenth century, the one which rose most rapidly to prominence was Savannah, Georgia. Established by Oglethorpe as the base of operations for his administration of the colony of Georgia in 1733, Savannah was, to a large extent, a child of Charlestown, which provided it initially with a great deal of aid (Crane, 1930). Charlestown favored Savannah and Georgia for the protection they afforded. Affection soon turned to hostility, however, as Savannah began to seek the lucrative Indian trade (Fant, 1932, 6-10). Oglethorpe realized that Savannah was in a much better position to tap traffic with the Creeks than Charlestown, which had been using the Savannah River as her main trade route since the early days. It was preposterous to Charlestown that an upstart colony, two years old, should set out to interfere with its oldest established business. According to regulations set up in Savannah, all people trading with the Indians west of the Savannah were required to come to Savannah to secure a license. Traders neglecting to do so were fined heavily (Crane 1956, 123-124).

Augusta was established by Savannah in 1735. Ostensibly it was a receiving station for the Indian trade. Situated across river from old Savannah Town, it was a further provocation to Charlestown's business interests. Savannah's ambitions were encouraged by the attitude of the Indians. The Creeks were generally desirous of the success of the Georgia scheme, viewing Savannah and Augusta as an alternative source of English trade goods, which would help to break the near-monopoly enjoyed by South Carolina in supplying manufactured articles (DeVorsey, 1964, 139).

Though the trade regulations gave Georgians no preference over Carolina's traders, the strategic position of Georgia quickly gave them a large share of the Indian traffic thus creating a trade rivalry with Charlestown which was to last through the nineteenth century. Augusta soon grew into the greatest fur trading center in the southern colonies (at the height of the season, as many as 600 white traders with 2,000 pack horses went there to trade), while Savannah Town (South Carolina) fell into decay (Jones, 1890, 25-26). The independence of Savannah (Georgia) from Charlestown became even more marked in 1744, when the trading company of Habersham and Harris located there. They provided the first organized exporting and importing business for the colony, thus making Savannah an overseas port. Before this time Charlestown had handled Georgia's foreign trade. They were the first to charter vessels to carry away Georgia products. Their trade began

with New York, Boston, and Philadelphia, but by 1749 vessels were sailing directly from Savannah to Europe (Coulter, 1933, 59).

At the start of the colony, Oglethorpe was anxious to develop defense outposts similar to those being set up by Charlestown (DeVorsey, 1961, 139-140). The first of these was set up at Frederica about eight miles below the mouth of the Altamaha River on St. Simon's Island, so placed to protect the coast from Spanish attack by water. A second, New Inverness, later called Darien, was placed upon the northern branch of the Altamaha River, close to the site of Carolina's old Fort King George. It guarded the overland coast route from Florida. A third village, Ebenezer, was placed squarely on the path running into Savannah from the northwest. Frederica was neglected after the decline of the maritime threat from Spain, and Ebenezer proved unsatisfactory because of malaria and low fertility, but Darien survived the colonial period to benefit from interior expansion during the early nineteenth century (Callaway, 1948, 21-27).

Two other significant coastal settlements were made during the Colonial Period as a result of settlers spreading into the area west of the Savannah. In 1752 the Dorchester Society moved from their settlement in South Carolina to the Midway District of Georgia and 300 acres were granted to them for the foundation of a town named Sunbury (Jones, 1883, 491-501). Settled in

1758, the town grew so rapidly that in 1762 it was raised to the status of a port of entry (Harden, 1913, 150). According to McCall:

> Soon after its settlement and organization as a town it [Sunbury] rose into considerable commercial importance; emigrants came from different quarters to this healthy maritime port, particularly from Bermuda; about seventy came from that island, but unfortunately for them and the reputation of the town, a mortal epidemic broke out and carried off about fifty of their number the first year; it is highly probable they brought the seeds of disease with them. Of the remainder as many as were able returned to their native country. The circumstance, however did not very much retard the growing state of this eligible spot; a lucrative trade was carried on with various parts of the West Indies in lumber, rice, indigo, corn, etc. Seven square-rigged vessels have been known to enter the port of Sunbury in one day and about the years 1769 and 1770 it was thought by many in commercial consequence to rival Savannah. In this prosperous state it continued with very little interruption until the war commenced between Great Britain and America, when it was taken by the British troops under General Provost. After the Revolutionary War trade took a different channel, and Savannah became the receptacle for the exports and imports of the province which had formerly passed through Sunbury (McCall, 1811, 177).

In 1773 the Surveyor of Post Roads, in making recommendations for postal service, mentioned besides Savannah only Sunbury which he termed "a thriving place, trade increases there rapidly." (Quoted in Callaway, 1948, 45). At this time the port's lack of deep river penetration was not a critical factor.

Also established before the revolution, was the town of Brunswick. On the second of October 1770, the Governor

of Georgia and his Council met in Savannah, and among the items transacted was a resolve

> that a town be forthwith laid out at Carr's Fields on the Turtle River in the Parish of St. David heretofore reserved for that purpose and the said Town to be called Brunswick (Quoted in Harden, 1913, 516).

That the intention of the council was carried out is shown by DeBrahm who said,

> In 1771 a town was laid out on the said spot, Brownswig; many are the petitioners who have applied to the Governor in Council for propertie in this new town -- from its situation extremely promising (Quoted in Harden, 1913, 517).

Unfortunately this area, which had long been a cause of dispute between Spain and England and eagerly sought by South Carolina and Georgia, proved a disappointment. Swamps and pine barrens characterized the inland areas and Seminole raids were an ever-present threat. Agricultural productivity remained low, and Brunswick, although in possession of the best deep-water harbor in Georgia, had no navigable river connection with the interior. It was destined to remain an insignificant place, until the railroads helped it to overcome its territorial disadvantages in the mid-nineteenth century.

The settlement of the coastal areas of Georgia was influenced by communications as was that of the Carolinas. Navigable streams were most desirable and much of the commerce out of Savannah and Sunbury was entirely coastal. However, where lands could not be reached by boat, roads

were an important consideration, and Savannah paid them a great deal of attention. During the 1730's a wagon road was built from Savannah to Darien to connect the coast settlements, and another road was cleared out in 1739, joining Savannah with Augusta (Coulter, 1933, 35). The Darien road was completed after 1763 as the King's Road to St. Augustine, thus providing a connection between all the major Atlantic Coast ports, from New England to Florida.

In the early years of the colonial period, despite the friction between Savannah and Charlestown, there was little overt competition between Carolina and Georgia ports for trade areas. They were widely separated geographically, and agricultural settlements were limited to localized areas around them (Crittenden, 1931 B, 153). Intense competition developed after 1750, with the settlement of the interior and the appearance there of a number of scattered villages. This awakened some coastal ports before 1775 to the opportunities for inland commerce (McKelvey, 1969, 21). Townsmen as well as rural settlers demanded highways and improved roads, and turned with increased interest to speculation in western lands after 1750.

The Beginnings of Back Country Settlement

For the first time, the upland areas began to receive substantial numbers of settlers. These people generally derived, not from the coastal areas, but from Virginia and Pennsylvania. Moving primarily from the north after 1750, they spread first into northwestern North Carolina, and then southward into Upper South Carolina and Georgia. Unlike the majority of coastal settlers, these people were not plantation operators, fur traders, or timber merchants, but small farmers seeking fertile new lands which had more to offer than the worn-out Tidewater areas of the mid-Atlantic States. They found such areas far inland, and isolated from the coast by topography and the lack of any significant routeways.

The Back Country, as it came to be called, differed markedly from Tidewater and Low Country. It was an upland region of hills, fertile limestone or stiff clay soils, many varieties of forests, and a vastly superior climate. Although in the west the Blue Ridge separated the valley of Virginia, the main natural connection to the north, from the piedmont, several gaps afforded connections. To the east, on the other hand, the sparsely settled western part of the North Carolina coastal plain tended to set the piedmont off from the country of Albemarle and the Cape Fear, while in South Carolina and Georgia the Pine Barrens

interposed a virtual no man's land between the Low Country and the Back Country. In Virginia and Maryland ready access to the piedmont was possible via the Potomac and the James, but the rivers of North Carolina flowed southeastward to the ocean, cutting off an easy approach to the piedmont from Edenton, New Bern, or Cape Fear. It was this river alignment which largely influenced the main routes of penetration into the region.

The major access route was the "Great Philadelphia Wagon Road" which began at the Schylkill River Ferry opposite Philadelphia and ran through the Shenandoah valley and Roanoke to Wachovia on a branch of the Yadkin, where it originally terminated. After 1760 it was extended by migrants, down the North Carolina piedmont to Salisbury, where it connected with the Indian Trading Path or Occaneechi Trail (Bridenbaugh, 1952, 129). This was a long route which ran from Bermuda Hundred on the James River in Virginia to the lands of the Catawba and the Cherokee (Map, Fry and Jefferson, 1755). It was originally used by the Indians for various hunting and military expeditions but, by the middle seventeenth century, was also the main artery used by the traders and trappers of Virginia (Kemper, 1942). It crossed the Roanoke River at Moniseep Ford where the river crosses the boundary between Virginia and North Carolina. From there it curved southward through the present day cities of Henderson and Oxford to Hillsboro, and then by way of Graham and Alamance Battleground to

Trading Ford on the Yadkin River north of Salisbury. From there it bent south to the Catawba valley and then west to the Cherokee Towns on the upper Savannah (Boyd, 1925, 13-14). Along this early highway caravans consisting of 50 to 100 traders and their attendants, financed by Virginia merchants, often passed on their way to and from the Indian villages. With the expansion of South Carolina the Virginia trade waned and the caravans disappeared. The eastern part of the trail was converted, however, into a wagon road by farmers coming into North Carolina who used it on their journeys to Petersburg, Virginia, the main market center for central North Carolina during the latter part of the eighteenth century (Franklin, 1926, 501).

A section of the western part of the trail between Salisbury and contemporary Charlotte was incorporated into the Great Philadelphia Wagon Road. South of Charlotte, the Virginia trail was intersected by the hinterland-pirating road from Charlestown constructed to siphon Virginia's trade. The Philadelphia route made use of this as far as Pine Tree Hill (Camden) and from there it was extended west and then south to take advantage of the river shallows of the Saluda at the Congarees (Columbia). Beyond the Congarees the wagon road forked. One branch followed a pre-existing route built by Charlestown to Ninety-Six. The other branch ran to Augusta. Augusta and Ninety-Six were the last staging points during the Colonial Period before the Indian country. By 1775 the road had an

entire length of over 735 miles. In the last 16 years of the Colonial Period, it was the most heavily traveled pioneer road in America (Bridenbaugh, 1952, 130).

Upland Towns in North Carolina

This wave of immigration gave rise to a number of little upland villages and towns between 1750 and 1770 (Fig. 3). Interestingly, they all developed along the roads from Pennsylvania and Virginia (Map, Mouzon, 1775). Growing up in answer to some basic service needs of the incoming population, they started at road junctions, at a ferry or bridging point, around a county courthouse or a grist mill, and always in the middle of a rapidly populating district. Obviously they began as stages along the Great Road supplying services and shelter for travelers. They soon became neighborhood centers attracting artisans, serving as market towns, and administering government (Bridenbaugh, 1952, 147). Hillsboro (1754) and Salisbury (1753) were both established as the seats of government of Orange County and Rowan County respectively. They were situated along the Virginia road where early settlers anticipated their locations would facilitate growth. Minor roads, perhaps merely trackways, existed in the vicinity of both places before they were established, and the county roads to and from their county seats were further extended. The two towns grew rapidly. Although there were

only about 40 inhabitants in Hillsboro in 1764, Governor Martin in 1772 found settlers in the vicinity of the town "numerous beyond belief," adding also that the settlements were in a state of "infantine rudeness." (Quoted in Merrens, 1964, 163.) This is a strong indication that urban growth and rural settlement proceeded side by side. Salisbury contained only seven or eight houses and a jail in 1756, but the taxables in Rowan County increased from 2,800 in 1765 to 3,957 in 1770, and Salisbury gained in importance. Its nascent urban development was recognized by special legislation in 1770 when an "Act for regulating the Town of Salisbury" passed the North Carolina Assembly (Bridenbaugh, 1952, 149). Salisbury's great asset was a location at the junction of roads from Charlestown, Philadelphia, Virginia, and the Cape Fear (Map, Sauthier, 1770).

Salem, founded in 1766, was probably the largest town and certainly the chief commercial center of the piedmont in the eighteenth century. The Moravian settlement of Wachovia, in which Salem was established, had served as a trading center before the town was founded. The Moravians were visited by farmers who came from considerable distances to purchase and sell goods and to buy services. Moravian wagons regularly traveled to and from Wachovia, carrying their own surplus, or goods purchased from others between the settlement and distant markets (Bridenbaugh, 1952, 138). More so than any other group of

settlers, the Moravians seem to have planned their trading activities, supervising and organizing their economic activities with a view to exploiting the most profitable market possibilities.

This planning was important because the new towns were so remote from the other settled areas of the eastern colonies. Although there was a great emphasis in the upland settlements on self-sufficient agriculture, there inevitably were surpluses of foodstuff commodities like wheat. Tobacco, with coastal encouragement, was grown widely as a cash crop. At the same time there was a wide variety of manufactured goods which the pioneer farmer had no way to produce. Supply and demand therefore necessitated at least a rudimentary trade network for the uplands. The region was seriously handicapped by lack of navigable waters, slow expensive land transportation over poor trails, and scarcity of markets and merchants (Bridenbaugh, 1952, 144-147).

The Moravians had a choice of three practical alternative routes to the seaboard. They could have gone to Charlestown, to the lower Cape Fear, or to Pennsylvania and Virginia. Their original choice, according to the records, was the shortest route that led to the Cape Fear and Port Brunswick. The construction of a suitable road would have made possible direct overland trade with Wilmington and perhaps Brunswick, but the northwest branch of the Cape Fear River, to the extent that it could be used,

was a more practical and immediately available route. By early 1753, a road was being constructed "to a landing to which goods can be brought in boats from Cape Fear and then hauled further into the country [to Salem]." (Fries, 1922, V. 1, 59). The place of the landing, later called Spring Hill, was on the northwest branch of the Cape Fear River about three miles below the present day Fayetteville.

By the summer of 1754 the road was completed and Joseph Loesch, the business manager and treasurer of the Moravians, went to Wilmington to investigate the possibilities for trade and shipping there. He was pleased with both the route and the prospects and especially with the number of vessels plying between Port Brunswick and New York (Fries, 1922, V. 1, 105; V. 2, 533). For the next few years, however, the Moravians were kept busy with construction and land-clearing. Needed goods, usually bare necessities, were carried from Pennsylvania by wagon. Trade, in the real sense of the word, was not developed (Fries, 1922, V. 2, 540). Only by 1759 were they ready to begin commercial activities that would include export of their own products in exchange for their own needs.

At this time they turned their attention again to the lower Cape Fear. Near the end of 1759, Loesch again traveled to Wilmington. The General Assembly was in session there and in part Loesch's purpose was to solicit aid in the promotion of trade between the interior and the coast. He met with little success, and six months later

the Moravians were still receiving their needs by wagon from Pennsylvania (Fries, 1922, V. 1, 214). In the following fall however, efforts were begun to establish a town on the upper Cape Fear that might serve to attract the trade of the interior to the river.

In 1760 the member of the assembly from Bladen County presented a petition in which certain residents of that county requested the assembly to incorporate a town at the mouth of Rockfish Creek. An immediate objection was voiced by other inhabitants of Bladen who joined with residents of New Hanover and Cumberland Counties in contending that the best interest of trade and of the Cape Fear would be served by a town at Cross Creek. A small community in Cumberland County (see below), Cross Creek had been connected with Orange Court House (Hillsboro) by a road authorized in 1755 (Lefler and Newsome, 1963, 102). Faced with a conflict of opinion, the assembly referred the problem to a committee for study. Both the recommended sites were rejected, and Campbellton was incorporated by an act passed in 1762. The new town was located on the west bank of the Northwest Cape Fear about a mile east of the Cross Creek community, which was not itself on the river. The purpose of the town as expressed in the act of incorporation was to

> encourage honest and able traders to reside therein, by means whereof the trade of the counties of Anson and Rowan, which at present centers in Charlestown, South Carolina, to the great prejudice of this Province, will be drawn to said town (Quoted in Lee, 1965, 675).

It is interesting to note that the Campbellton act was introduced by the representative of the town of Brunswick and that the commissioners appointed to lay out the town included several men prominent in the business affairs of both Wilmington and Brunswick. Their interest in drawing the trade of the frontier to the upper Cape Fear was almost certainly the knowledge that it would largely push down river through the lower Cape Fear and Port Brunswick. Unfortunately their efforts came a little late. As the act indicated, Moravian trade was already flowing strongly to other places, particularly to South Carolina. Speculative investment in land in the upland towns by coastal merchants appears to have been common (Morris and Morris, 1939).

After their frustration in their initial efforts to trade through the Cape Fear, the Moravians turned to Virginia. In 1761 "an attempt was made to establish trade with Petersburg in Virginia." (Fries, 1922, V. 1, 234.) This was the same general route which the western section of the province had used in early days, but the Moravians fared no better at Petersburg than at Wilmington, and this attempt was not pursued. Also in 1761, however, a prominent Charlestown merchant went to the Moravians with an offer to serve their needs and an offer of credit (Fries, 1922, V. 1, 234-236). In the fall of 1761, the first trade wagon left Wachovia for Charlestown to begin a steady and continuing flow of trade between the two settlements. It

was this trade which, the following year, was noted in the Campbellton act.

In addition to their own needs the Moravians obtained merchandise from Charlestown for the store they operated, and which served the surrounding countryside. Through this store they obtained by trade, large quantities of deerskins which formed the bulk of their shipments to Charlestown. Their shipments included beaver skins, butter, tallow, and other commodities. For Charlestown it was a welcome addition to an already prosperous commerce (Fries, 1922, V. 1, 245). Concerned by Charlestown's preeminence in the interior trade, Governor Tryon of North Carolina in 1766 asked the Moravians why they traded there. They replied that many of their needs could not be supplied in Wilmington, and that prices there were ten percent higher than at Charlestown. They also added that deerskins, the principal commodity, brought more in Charlestown. A consequent attempt by Tryon to establish trade between the Moravians and Brunswick failed because of Moravian dissatisfaction with Brunswick business attitudes (Fries, 1922, V. 1, 356). The attempt was made before completion of a road from the frontier to Wilmington and Brunswick, which might have changed the Moravians' minds.

An act was passed in 1768 for the laying out of a road from the frontiers of the province through the counties of Mecklenburg, Rowan, Anson, and Bladen to Wilmington and Brunswick. According to Tryon,

> By this means we may bring down a considerable quantity of the produce of the back country to our own port which at present are diverted to South Carolina; a circumstance as it adds much to the credit of Charlestown exports, lessens in the same proportion those of this province (Quoted in Lee, 1965, 175).

In the years that followed, laws were passed providing for roads intended to draw the interior trade through Port Brunswick. The will of the assembly was not always carried out, however, and by the time of the revolution there had appeared more laws than roads. Four years after it had been approved, the direct road from the frontier to Brunswick and Wilmington had not materialized, and there was apparently little hope that it would be. In December 1771, the representative of Brunswick presented a bill for a road through the same frontier counties of Mecklenburg, Rowan, and Anson to Campbellton. It was to originate at three separate points: Charlotte, Sherill's Ford on the Catawba River, and Salisbury. This bill became law.

When the assembly next met in 1773, even greater efforts were made to shift trade to the Cape Fear and particularly to Campbellton, which was described by the then governor as the place which "promises to be the greatest Mart of the Western Parts of the Province." (Quoted in Lee, 1965, 179.) The desire to project a road through Mecklenburg, Rowan, and Anson Counties to Campbellton was reaffirmed, when new commissioners were appointed to replace those named in the original act who had failed

to lay out the road. Another act ordered a road to be opened from the Dan River to Campbellton, that was intended to draw the trade of Guilford and Chatham Counties to Campbellton. In the same session, Elizabethtown was incorporated for the purpose of

> establishing an entree port between Wilmington an and Campbellton that will be advantageous to the Commerce and Navigation of the North West branch of the Cape Fear River (Quoted in Lee, 1965, 179).

A short time later, a road was authorized from there to Charlotte. It was intended to attract at least part of the trade of Mecklenburg to the newly created town. By 1775 the merchants of Wilmington were instrumental in getting roads built from the Cape Fear River to Halifax, Hillsboro, Salem, and Cheraw. Other ports also tried to grasp at the burgeoning inland trade (Watson, 1968). Roads were built west from Beaufort, Bath, New Bern, and Edenton (Map, Mouzon, 1775). These ports suffered relative to Wilmington, however, because they were more remote from the main agricultural areas, and because their harbors were restricted physically in terms of ocean trade. According to Crittenden the new roads "changed the situation to some extent but did not bring the Back Country and the coastal plain into close contact with one another." (Crittenden, 1931 C, 243.)

The Inland Ports

What emerged from these moves to unite the east and the interior during the late Colonial Period was a much more extensive river road transportation network than had existed before 1750 and a multiplication of penetration lines (Fig. 1). Perhaps the most important result was the emergence of a series of towns at the effective limits of navigation on the major rivers, where goods had to be transferred to smaller boats, or more commonly to wagons on their upward journey. From north to south, these head-of-navigation towns were Halifax, Tarboro, Campbellton, Cross Creek, Camden, and Augusta. Two others, Columbia and Cheraw, were in an incipient stage. Only Augusta had been established by 1750, the others originated between 1750 and 1775.

The prime reason for the existence of all of these cities was the handling of trade as it flowed between the coast and the interior. In all of them, merchants used both overland and river transportation to move the goods involved in the trade. The two largest of the four in North Carolina were Halifax and Cross Creek. Halifax was built on the south bank of the Roanoke River about 60 miles northwest of Edenton and only about 15 miles from the boundary between Virginia and North Carolina. It was officially founded in 1757, at the request of a number of merchants anxious to promote trade and navigation on the

Roanoke River and to divert trade from its normal Virginia channels (Merrens, 1964, 156). This particular point on the river had the special advantage of being the head-of-navigation on the river.

The ties of Halifax merchants were mostly with places in Virginia but also with Edenton (Lefler and Newsome, 1963, 102). The latter was easily reached by river or road, and in it were located the customs inspectors who could officially clear goods destined for shipment outside the colony. Westward from Halifax, a number of roads provided communication to and from the interior, and a road linking Halifax with Hillsboro was expecially important. When the main coastal highway between North and South Carolina was shifted west in North Carolina to avoid the Sounds, it passed through Halifax rather than Edenton, indicating its rising importance and probably aiding in its growth (Crittenden, 1931 C, 239). The town's role at the time of the revolution, as a collecting and distributing center for the piedmont, was emphasized by the surveyor of post roads in 1774. He wrote,

> This place contains about 50 houses, stores are kept here to supply the country round with European and West India Commoditys for which Pork, Tobacco, Indian corn, Wheat and Lumber are taken in return (Quoted in Merrens, 1964, 156).

Of Tarboro little is known during the Colonial Period. It was established in 1760 but did not become of much importance before the revolution. The principle of

its location was similar to that of the other head-of-navigation towns. It served to collect and distribute goods for the trade of Port Bath Town and the upper Tar valley. Its two main disadvantages were its distance from the settled areas of the piedmont and the unattractiveness of Port Bath Town to shipping. As a result, it never developed to the extent of the other "Fall Line" towns. The tobacco and naval stores trades were its largest concern (Merrens, 1964, 160-162).

Cross Creek developed early around a small stream of the same name about one and a half miles west of where the stream flowed into the North West Cape Fear River. According to Bartram it was an ideal milling site (Harper, 1958, 302). Strong ties existed between Cross Creek and Wilmington from its earliest days. Most of the Wilmington merchants had agents in Cross Creek promoting the flow of goods between the seaport and the trading town and attempting to draw to Wilmington the trade that had previously been attracted to South Carolina. Roads converged on Cross Creek from a number of places in the interior and Charlotte. (Wheat played an especially important part in this trade.)

Cross Creek's main problem was that it had not originally been located directly on the Cape Fear, and as time went on, this proved a great disadvantage. To counteract this situation, the state government established Campbellton (see above, p.66). The only direct road access to the

Back Country, however, lay through Cross Creek, which continued to be the center of trade of the Upper Cape Fear in spite of the great hopes for Campbellton (Lee, 1964, 180). The rivalry between the two towns lasted until the revolution, but was broken in 1778 when they merged under the name of Campbellton (Merrens, 1964, 160).

The South Carolina up country trade centers were not nearly as well developed as those to the north by the time of the revolution, but they were nevertheless important. In-migration from the north, from 1750 to 1775, filled in the spaces in the middle country and pushed into the present Lancaster, Fairfield, Newberry, Saluda, and Edgefield Counties up to the Indian boundary line in Greenville and Anderson Districts. For immigrants under a province-sponsored bounty agreement, four townships were laid off west of Ninety-Six in 1762. They were Boonesborough on Long Canes Creek, Hillsborough with the town of New Bordeaux near where Long Canes Creek enters Little River, Londonborough with its town of Londonderry on Hard-labor Creek, and Belfast on Stevens Creek (Wallace, 1934, 43-44). Settlers in these new areas needed trade centers just as the Moravians did, and they fell directly within Charlestown's commercial sphere.

The city's trade territory was organized by means of village and cross roads stores, which were branches of larger firms in Charlestown. These outlying stores were developed as feeders and distributors for the great import-

export houses of the capital. Originally established in lowland villages, such as Monks Corner, Dorchester, and Jacksonburgh, these stores gradually extended away from the city towards the Back Country (Sellers, 1934, 88). Many firms were involved in the trade but one was dominant -- that of Joseph Kershaw and associates. It was responsible for the erection of stores at Pine Tree Hill on the Wateree River (1758), Rocky Mount on the Peedee River (1763), and Granby on the Saluda River (1763) (Sellers, 1934, 89). Strategically placed at the junction of up country roads with the head-of-river navigation, these stores quickly developed into the towns of Camden (Pine Tree Hill) and Cheraw (Rocky Mount). Granby matured more slowly and did not receive town status until after the revolution.

Camden, which was situated in the earlier established Fredericksburg township, became the center of a valuable Back Country trade in tobacco, flour, ship-bread, deerskins, and indigo, which were transported to Charlestown by land and water. As early as 1760 Kershaw was producing flour from mills at Pine Tree Creek for shipment to the Low Country, and he also operated sawmills, a bakery, a tobacco warehouse, and a distillery before 1775 (Sellers, 1934, 90). Although Camden, laid out in 1768, was hardly more than a struggling village at the time of the revolution, Kershaw was petitioning as early as 1765 for the establishment of a fair at Pine Tree Hill. In 1774 his

request was finally granted when the proprietors of Camden were empowered to hold two fairs of three days each per year (Kirkland and Kennedy, 1905, 13). This greatly enhanced the town's commercial position. In addition to its location at the Falls of the Wateree, Camden was also situated at the junction of the Charleston-Charlotte wagon road and the piedmont wagon road to Augusta. This tended to give it preeminence over Granby and Cheraw.

Cheraw was laid out by Joseph Kershaw and his brothers at the Falls of the Peedee in 1766. Called at first Cheraw, it was later labeled Chatham, in honor of an English lord, but that name was rarely used (Gregg, 1867, 463). According to Gregg,

> It was supposed at first by the inhabitants of the neighboring country that on account of its [Cheraw] position, being at the head of navigation on the river, and its proximity to a large and fertile region in North Carolina, it would become a place of permanent and increasing commercial importance. It was, from an early period of its history, the seat of several extensive trading establishments; but the expectation of the public was in the end, or for a time at least, disappointed. Having failed to become the seat of justice for Cheraws District [1785], though strenuous efforts were made to have it so, and proving at times very unhealthy, neither its population nor commerce increased so rapidly as anticipated (Gregg, 1867, 464).

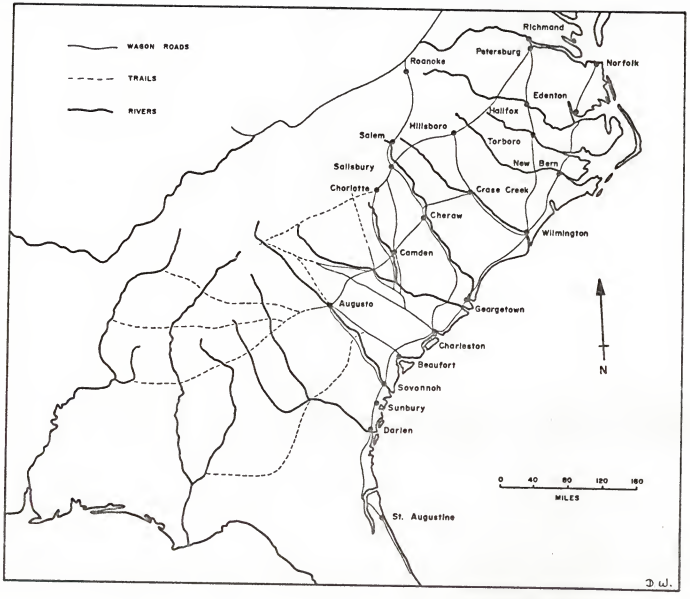
Between 1769 and 1785, however, Cheraw was one of the few locations of the circuit court, which indicates its local prominence. The other circuit court sites outside Charlestown at the time were Beaufort, Camden, Georgetown, Ninety-Six, and Orangeburg (Wallace, 1934, 62). Geographic

spread was obviously one factor in their selection but commercial status and accessibility had to be two others. In Georgia, Augusta was the only interior town of any note during the Colonial Period. Its early development has been previously noted (p.54). It was the earliest (1735), and by the revolution, best developed of the head-of-navigation towns due to its connections with the retreating fur trade. From Augusta, trails radiated to the Indian country (above p.35), the most important ones being that to the Coosa Valley and that along the Fall Line to the capital of the Creek confederacy at Old Ocmulgee Fields (later Macon) (Harris, 1935). The trade funneled along these trails was a source of direct competition between Charlestown and Savannah who vied for Augusta's favors.

Unlike the other Fall Line towns of the period, Augusta did not have a substantial agricultural trade before the revolution, because it lay so close to the Indian boundary. There were a few agricultural settlements west of the Savannah by 1775, like the Quaker town of Wrightsborough, and further to the south Queensborough, but they were relatively insignificant (Roberts, 1950; Green, 1950). The naturalist Bartram, after visiting Augusta in 1773, noted its potential:

> Augusta, thus seated at the head of navigation and just below the conflux of several of its most considerable branches, without a competitor, commands the trade and commerce of vast fruitful regions above it, and from every side to a great distance; and I do not hesitate to pronounce, is my

Figure 3. Towns and transport lines in Georgia and the Carolinas ca. 1770 (derived from Maps, Mouzon, 1775, and Wright, 1763).


WAGON ROADS
TRAILS
RIVERS
Richmond
Petersburg
Norfolk
Roanoke
Edenton
Halifax
Hillsboro
Salem
Torboro
New Bern
Salisbury
Charlotte
Crose Creek
Cheraw
Wilmington
Camden
Augusta
Georgetown
Charleston
Beaufort
Savannah
Sunbury
Darien
St. Augustine
N
0 40 80 120 160
MILES
D.W.

> opinion that it will very soon become the metropolis of Georgia (Quoted in Jones, 1890, 57).

Augusta's rapid expansion was to come after the revolution when Indian land cessions opened up new areas to settlement.

Summary

Because of their roles in later periods, much attention has been paid here to emerging interior centers. In closing it should be emphasized that, in 1775, the colonial society was still predominantly coastal and riverine in nature. The main population nodes were port cities which gained their economic support primarily from lateral trade along the coast and from shipments to places overseas of the products of their immediate hinterlands (Fig. 3).

As yet the uplands were largely of a subsistence agricultural character and not, therefore, overly concerned about coastal connections. Large areas there remained undeveloped. Particularly this was the case in the southwest where advance was restricted by the Indian frontier, and along the Appalachian fringe where terrain was a deterrent. With the removal of the colonial government the way was clear for more rapid expulsion of the Indians and an increased self-determination in economic affairs. These two developments were to cause some significant shifts in the transportation pattern after the revolution.

CHAPTER 3

THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS IN DETAIL, PART 2, 1775-1830

Introduction

The most significant development affecting transport expansion in the three states during the period after the revolution was the occupation of their remotest corners by European settlers. This was a process which spanned 50 years culminating with the final Creek cession in Georgia in 1828. Treaties with the Cherokees in 1777 in North Carolina, realized the cession of lands east of the Blue Ridge in that state. Various Indian treaties with the United States in 1785, 1791, and 1798 confirmed nearly all the lands in the Carolinas east of the Alleghenies as the property of the States (Lefler and Newsome, 1963, 291). These treaties threw open the whole mountain region to the whites, and while there had been a few isolated families in the area before 1783, settlers rushed in after that date. An indication of this surge was the creation of the state of Tennessee in 1796 (Billington, 1967, 249-250).

The mountains were not as attractive to settlers, however, as the piedmont to the southwest. By 1779 the Indians had given up all of South Carolina except a small slice in the extreme northwest corner. As a result, at the end of the American Revolution, practically all of upper South Carolina had been opened up by land-hungry frontiersmen. Their motion was increased with the coming of the peace. Georgia was not as fortunate as South Carolina in freeing her lands from the Indians, but in 1773 a treaty was made in Augusta whereby the Indians relinquished more than 2,000,000 acres in payment for their debts. This area was quickly occupied after the revolution from piedmont South Carolina and points northeast (Jones, 1890, 43-52).

In 1780 the Creeks gave up rights to all lands east of the Oconee, and between then and 1830 there was a piecemeal procession of the frontier westward as one Indian cession followed another. Territory once secured was immediately laid out into counties and surveyed into lots which were distributed via land lottery. From 1800 to 1809, fourteen new counties were organized in Georgia; from 1810 to 1819, nine counties; from 1820 to 1829, twenty-nine counties; and from 1830 to 1839, seventeen counties. During the first four decades of the nineteenth century Georgia grew in population from 162,000 to 691,000 (Coulter, 1933, 205-206). Almost all of this growth was in middle and upper Georgia (Map in Zelinsky, 1951, 192).

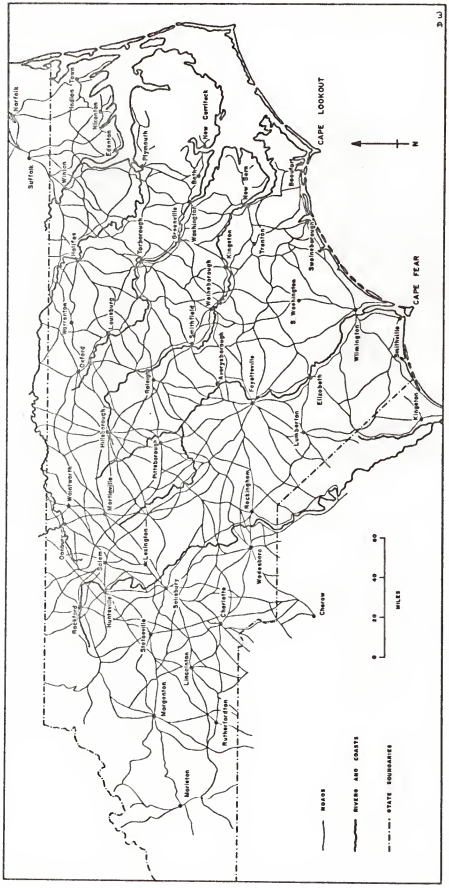
As a result of this tremendous immigration to the Georgia-Carolina piedmont between 1775 and 1830, a large number of agricultural market and service towns emerged there. At the same time economic attention was diverted from the coast and coastal plain which experienced considerably slower growth during the period. In many cases the lowlands witnessed economic stagnation and decline due to out-migration to the piedmont and the southwest.

Urban Expansion in North Carolina

North Carolina's settled area rapidly filled out after the revolution. By 1808 the main towns of 1775 had been joined by a number of other service centers (Fig. 4). These were most dense in the rich agricultural areas of the central east, where a number of county towns were prominent as focal points in the road network. They were, almost always, not only centers of county roads, but also located at junctions of major routes within the state built during the Colonial Period.

Among these were Pittsboro at the junction of the New Bern-Salisbury road with the Hillsboro-Fayetteville road, Louisburg at the junction of the Hillsboro-Halifax and Oxford-Tarboro roads, and Wadesboro at the junction of the Salisbury-Cheraw and Charlotte-Fayetteville roads. The majority of other towns developed on the major ingress routes from the north. Four of these were on the old

Figure 4. Roads and towns in North Carolina in 1808 (derived from Map, Price and Strother, 1808).


CAPE LOOKOUT
CAPE FEAR
N
Norfolk
Suffolk
Wilson
Edenton
Plymouth
New Currituck
Bath
New Bern
Beaufort
Hatteras
Tarborough
Greenville
Washington
Kingston
Trenton
Swainsborough
Wallsborough
Smithfield
Lawsburg
Warrenton
Oxford
Raleigh
Fayetteville
Elizabeth
Wilmington
Bellville
Kingston
Lumberton
Hillsborough
Pittsborough
Wintsville
Marlowville
Rockingham
Oxford
Salem
Lexington
Wadesboro
Rockford
Huntsville
Salisbury
Charlotte
Charow
Statesville
Lincolnton
Morganton
Rutherfordton
Marlston
0
20
40
60
MILES
ROADS
RIVERS AND COASTS
STATE BOUNDARIES

Cherokee Trail, which had a prominent place in the location of piedmont towns at the earlier period. The four were, from north to south, Warrenton, Oxford, Lexington, and Concord. The remaining centers originated at junctions of routes penetrating the Tennessee country and newer short routes from Pennsylvania. Among these were Asheville at the junction of North Carolina's Tennessee River road and South Carolina's Saluda Gap road, Morganton at the junction of the Tennessee River road and the New River route from the Great Valley, Lincolnton on the Hickory Nut Gap road to Tennessee and the Catawba valley route from Virginia, and the New River route. All of these new towns were small, however, and in 1820 only six North Carolina towns had more than 1,000 population each. New Bern had a population of 3,663; Fayetteville, 3,532; Raleigh, 2,674; Wilmington, 2,633; Edenton, 1,561; and Washington, 1,034 (Lefler and Newsome, 1963, 299).

Washington was an interesting addition to the urban hierarchy because it was the only significant port to appear on the Georgia-Carolina coast after 1775, Morehead City exluded. Washington's growth was a reflection of the expansion of the forest-products industry away from the coast and up the Tar valley after 1800 (Perry, 1968, 512-515). As this movement took place, the position of Bath, the original Pamlico Sound port, became more and more isolated. Remoteness finally resulted in the establishment of Washington as the main port for the Tar River valley.

After an initial spurt of growth, however, Washington suffered, later in the nineteenth century, from the declining production of lumber in eastern North Carolina as cheaper producers to the south entered the market (Perry, 1968, 521-526).

The main town to emerge in this period was Raleigh, the new state capital. Although sometimes considered as a Fall Line settlement, Raleigh in fact is located some distance above that topographic feature on the Neuse. During the late eighteenth century, a trade center called Smithfield was developing at the head of navigation on the Neuse, and it appeared destined to assume a similar trading position to that of Halifax and Campbellton. It was the interior outpost of New Bern, the then state capital and major port (Map, Price and Strother, 1808).

By the outbreak of the revolution, however, New Bern was no longer centrally located with respect to the state's population, and there was an increasing demand, particularly from the west, for a new capital. Almost every town in the state was eager to be the seat of government, especially Fayetteville (Campbellton), Tarboro, and Hillsboro. New Bern remained the capital until 1778 but the pressure for a new permanent seat of government, more accessible to legislators and other officials, kept mounting. Many efforts were made to solve this problem during the next few years. Every legislature from 1777 to 1791 discussed the matter. In 1781 Hillsboro was chosen as the

site but there was much opposition to this decision. In a political trade by which Alexander Martin was elected governor, the law was repealed in 1782. During the following years, in an attempt to benefit all sections, the general assembly met at several different places -- Hillsboro, Halifax, Smithfield, Fayetteville, New Bern, and Tarboro. The migrations of the legislature from town to town, the residence of the governor and other administrative officials at different places, the location of government records in private homes, and the hauling of these records from town to town, did not make for efficiency in government and proved a serious obstacle to business (Lefler and Newsome, 1963, 243-244).

The general assembly finally admitted its failure to solve the capital problem and referred it to the Hillsboro Convention of 1788 which had been called to vote on the Constitution of the United States. This convention adopted an ordinance which provided that the capital be located in the centrally positioned Wake County. Almost half of the convention delegates -- 119 of 268 -- protested against the majority's decision contending that a place "inconvenient with commerce" would never "rise above the degree of a village." (Quoted in Lefler and Newsome, 1963, 244.) This dissenting minority maintained that Fayetteville was centrally located "at the head of the best navigation in the State," and that its selection

> would have a great and instantaneous effect upon the decayed commerce of this country . . . the principal part of which is now exported from Virginia and South Carolina (Quoted in Lefler and Newsome, 1963, 244).

Nevertheless, Raleigh was laid off on a virgin site close to the Wake County Court House in 1792.

This political, rather than economic, decision had two effects. The first was to automatically reduce the potential of Smithfield, which found much of its natural traffic diverted to the new capital. The second was to give Raleigh, as state capital, a much greater control of the alignment of transportation routes in North Carolina than any of the piedmont agricultural villages. This assured its domination and future growth. It was, with Asheville and neighboring Durham, the only town of any size in North Carolina in the nineteenth century to develop in a location not indicated in the Colonial Period -- not on the old Indian trails, at the Fall Line, or on the coast.

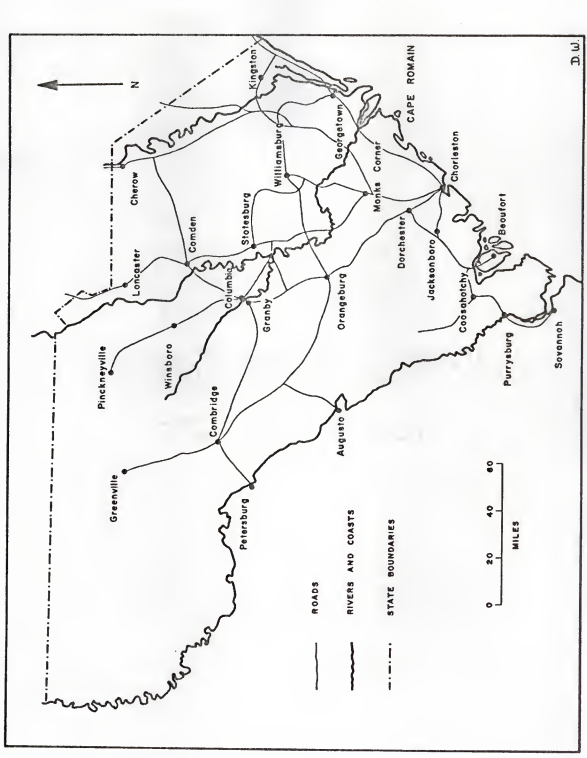
Town Development in South Carolina

The situation in South Carolina was very similar to that in North Carolina, where agricultural trade centers grew on already established routes (Map, Lewis, 1804). Walterboro and Barnwell emerged on the Charleston-Augusta road, Conwayboro on the coast road between Charleston and Wilmington, Kingstree and Marion on the lower Charleston-

Fayetteville road, Bennettsville and Sumterville on the upper Charleston-Fayetteville road, Lancaster on the Charleston-Charlotte road, and Winnsboro and Chesterville on the Charleston-Kings Mountain road. Spartanburg developed on the Old Cherokee Trail from Virginia at its junctions with the Saluda Gap road and the New River route from Virginia respectively. York, Union, and Anderson grew on the Kings Mountain road, the Saluda Gap road, and the Charleston-Cambridge (Ninety-Six) road, while Abbeville developed at the junction of the roads from Cambridge and Augusta to the Cherokee villages on the Tugaloo. Edgefield rose at the junction of the Charleston-Cambridge road and the wagon road from Charlotte to Augusta via Congarees (Columbia). The only villages which were prominent in 1830, and not located on pre-revolution arteries, were Laurensville, New Berry, and Darlington, all county towns. There were noticeably no new developments along the coast (Fig. 5).

In South Carolina, as in North Carolina, the populating of the uplands resulted in a demand for greater political representation and a shift of the capital closer to the western part of the state. A bitter fight, which began in 1780 appeared to be settled in 1786, when the Congarees was selected as the site for a new town to be named Columbia. In 1790, however, during the Constitutional Convention the capital question was still being debated, with Charleston desperately trying to gain a return

Figure 5. Roads and towns in South Carolina in 1804 (derived from Map, Lewis, 1804).


N
Kingston
Cheraw
Lancaster
Camden
Stateburg
Williamsburg
Georgetown
CAPE ROMAIN
Monks Corner
Charleston
Columbia
Granby
Orangeburg
Dorchester
Jacksonboro
Beaufort
Coosahatchy
Pinckneyville
Winnsboro
Cambridge
Augusta
Purrysburg
Savannah
Greenville
Petersburg
ROADS
RIVERS AND COASTS
STATE BOUNDARIES
0 20 40 60
MILES
D.W.

of the seat of government. The vote was close, with Columbia winning by 109 to 105. Charleston then lobbied for the state to have, in effect, two capitals (Wallace, 1934, 347-350).

The idea was adopted and the state was split into two parts for financial and legal administration -- an upper region based on Columbia, and a lower region on Charleston. Columbia had an ideal central location at the point where the main wagon roads of the state intersected at the Fall Line. As with Raleigh, its designation as the state capital gave it a decided advantage over similar Fall Line competitors. This was particularly the case with Camden which sat in close geographic proximity, and which, up to the selection of Columbia, had been the main town of the central part of the state.

Cheraw, or Chatham as it was variously known, developed an extensive trade throughout the Upper Peedee area but suffered because of a failure of attempts to open the Peedee for all-year navigation (Phillips, 1908, 349). It was incorporated in 1820-1821 but, by that time, was losing its trade position to Bennettsville, located off the river but on the main road from Fayetteville to Charleston. At the same time that Cheraw was struggling, however, a fourth South Carolina Fall Line town, Hamburg, was prospering.

Hamburg was an unusual town established in 1821 by a businessman with a grudge against the city of Augusta. He convinced the general assembly of South Carolina that he

could develop a market at Hamburg across the Savannah from Augusta. He claimed that he would provide, with the cooperation of Charleston, facilities for forwarding the cotton and other products of northwestern South Carolina, which had previously moved through Augusta to Savannah, to Charleston by water. At this time, Charleston was seeking to capture the trade of the upper Savannah River and the state, convinced of the feasibility of the Hamburg proposal, espoused Charleston's cause. Hamburg was chartered in 1827 after a brief period of rapid growth (Phillips, 1908, 76-81).

Urban Growth in Georgia

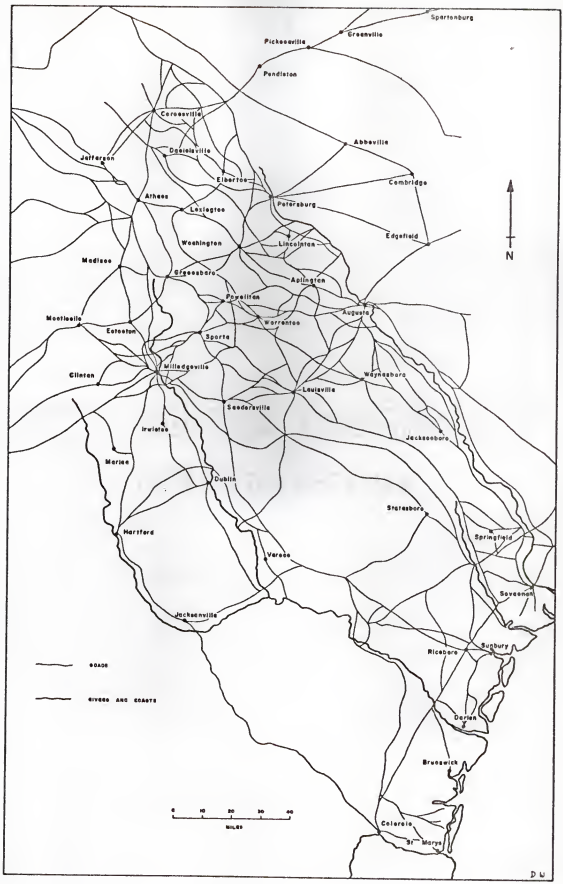
In Georgia, the period after the revolution was also a time to reshuffle capitals as the state expanded territorially towards the west. In this process the coastal area found itself outnumbered, and outvoted in the assembly. In 1786 the capital was removed to Augusta pending a decision on a permanent situation. Eventually, in 1796, the new town of Louisville was created to house the legislature and the proposed state university (Coulter, 1933, 163). Almost immediately, however, Louisville was found to be located off-center relative to the populated area, and in 1804 the state legislated into existence the town of Milledgeville (Coulter, 1933, 207). Like Columbia in South Carolina, Milledgeville was a centrally located Fall

Line situation. At Milledgeville the old Creek trading route from Alabama to Augusta crossed the Oconee.

By 1820 the settlement-wedge had been driven beyond the Ocmulgee. The Creek agency on that river was transformed into the town of Macon by an act of 1821. Five years later, in 1826, Columbus was laid out where the old Creek trading path crossed the Chattahoochee into Alabama (Coulter, 1933, 207). Columbus's development completed the chain of Fall Line towns between the Virginia border and Alabama. At the same time the piedmont areas to the north of the Fall Line in Georgia were being settled in much the same way as they had been in the Carolinas. Warrenton, Powellton, Sparta, Milledgeville, Clinton, Macon, Knoxville, and Columbus were on the lower path to the Creeks in Alabama. Eatonton and Monticello lay on the upper path or McIntosh road. Greensboro and Madison grew on the Hightower Trail to the Coosa valley. In Georgia, however, unlike the Carolinas, there were a number of significant agricultural settlements in areas which had no major transport routes before the revolution. This was true particularly in the north, where Athens, Elberton, Petersburg, and Washington were all important around 1800 (Fig. 6).

The founding of Athens was perhaps one of the most significant indicators of the changing geographic balance of settlement in the three states after 1775. Its real origin lay in a law of 1784 which set aside 40,000 acres

Figure 6. Roads and towns in Georgia in 1818 (derived from Map, Sturges, 1818).


Spartanburg
Greenville
Pickensville
Pendleton
Carnesville
Abbeville
Jefferson
Danielsville
Elberton
Cambridge
Athens
Lexington
Petersburg
Edgefield
Washington
Lincolnton
N
Madison
Greensboro
Aplington
Powellton
Augusta
Monticello
Warrenton
Eatonton
Sparta
Milledgeville
Clinton
Waynesboro
Louisville
Sandersville
Irwinton
Jacksonboro
Marion
Dublin
Statesboro
Hartford
Springfield
Vernon
Savannah
Jacksonville
Sunbury
Riceboro
ROADS
RIVERS AND COASTS
Darien
Brunswick
0 10 20 30 40
MILES
Colorado
St Marys
D W

of land in the then Washington and Franklin Counties as endowments for the new state university. Originally it was intended that Louisville should be the home of the university, but that decision was later changed in favor of Greensboro on the grounds of its greater accessibility. In 1800, however, it was decided to move the still unassembled school closer to its land endowment. A search was made for a site which could provide an adequate water and food supply for the institution. A point was finally selected in the developing agricultural area of Jackson County. The university campus was laid out, and around it, in consequent years, the town of Athens grew (Coulter, 1962). Its success was assured in 1811 when a Federal road from Ross's Landing on the Tennessee was aligned through Athens to Augusta, and the trail from Macon through Athens to Tennessee via the Rabun Gap began to pick up traffic. It is interesting to note, however, that in 1832 Athens, although a major route center, was not accorded as much importance as a number of surrounding towns -- e.g. Jefferson, Lexington, Monroe, and Danielsville (Map, Anon., 1832).

One of the most essential tasks in the piedmont settlement process was the provision of better transportation facilities. During the Colonial Period, great reliance had been placed upon the natural waterway system for the conveyance of people and goods. After the revolution, most economic development took place well beyond the

reach of naturally navigable rivers. At the same time the piedmont began to shift from a primarily subsistence to a staple-crop economy. The first crops produced for export were wheat and tobacco, but both were largely replaced by cotton after 1800. Commercial crop growers began to agitate increasingly after 1775 for cheaper and more reliable routes to the coast (Wallace, 1934, 400).

During the same years the coastal trade centers began to feel their control of inland trade slipping from their grasp. The relatively fixed hinterlands of the Colonial Period were broken down as the population spread across the mountains to the northwest and onto the Gulf plains in the southwest. This migration placed people at much greater distances from the Atlantic coast ports and made direct distance to the closest port a lesser factor than it had been in the past in the pattern of trade shipment. The result was support from both upland and lowland sections of the three states for a wide variety of internal improvements aimed at bettering the linkages between the interior and the coast.

The movement for better transportation facilities began in the late eighteenth century but picked up momentarily in the early nineteenth, when the coastal centers became absolutely persuaded that the only way to maintain their economic positions was to improve transport feeders (Phillips, 1908, 17-18). They came to view such investments as the only way to assure themselves a share of the

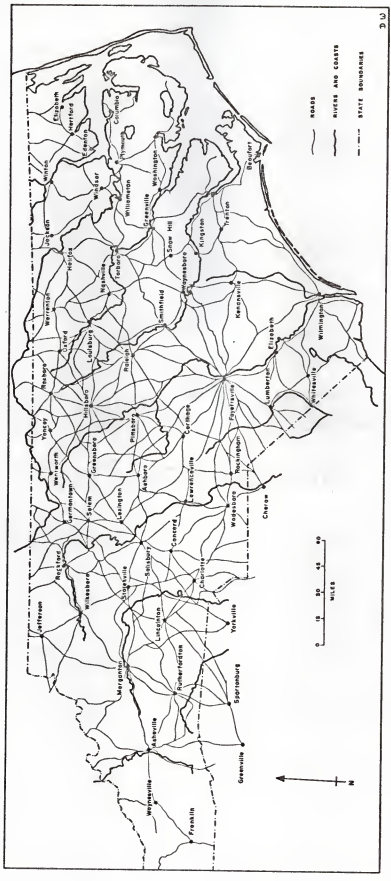
increasing upland production. This view was conditioned particularly by the trade competition of neighboring ports. They actively began to jostle each other in attempts to territorially expand their sphere of influence. Investments were channeled into three broad categories of improvement: the construction of arterial highways, the improvement of river channels, and the building of canals.

In general, road improvement took place in two directions. One was from the coast toward the mountains. A second was from northeast to southwest to aid the flow of settlers along the piedmont, and to maintain adequate administrative communications with the developing areas around the Gulf of Mexico (Billington, 1967, 310-338). The routes were a combination of both state and Federal enterprise. The states were most anxious to control the flow of commerce between their own ports and the interior and concentrated their roadbuilding efforts in that direction.

Road Building in the Carolinas

North Carolina, in 1788, ordered the construction of a road from New Bern to the Tennessee country via Raleigh, Guilford Courthouse near Greensboro, and Salem in an attempt to encourage the upper piedmont to send its goods to New Bern rather than Virginia ports. At the same time, a road was built from the Tennessee road, via Charlotte

Figure 7. Roads and towns in North Carolina in 1833 (derived from Map, Brazier, 1833).


ROADS
RIVERS AND COASTS
STATE BOUNDARIES
0 10 20 30 40
MILES
N
Jefferson
Wilkesboro
North Wilkesboro
Statesville
Mocksville
Lexington
Salisbury
Rockwell
Concord
Kannapolis
Cooleemee
Mooresville
Huntersville
Cornelius
Davidson
Charlotte
Pineville
Matthews
Monroe
Waxhaw
Wadesboro
Rockingham
Hamlet
Laurinburg
Lumberton
Fairmont
Whiteville
Elizabethtown
Tabor City
Chadbourn
Whiteville
Bolton
Fair Bluff
Lake Waccamaw
Columbus
Chesterfield
Cheraw
Bennettsville
Dillon
Latta
Marion
Mullins
Conway
Myrtle Beach
Georgetown
Andrews
Pawleys Island
Murrells Inlet
Litchfield
Pawleys Island
Garden City
Socastee
Conway
Loris
Nichols
Lake City
Kingstree
Hemingway
Johnsonville
Florence
Timmonsville
Lamar
Darlington
Hartsville
Society Hill
Cheraw
Bishopville
Lynchburg
Sumter
Camden
Kershaw
Lancaster
Chesterfield
Pageland
Jefferson
Bethune
Lugoff
Elgin
Winnsboro
Ridgeway
Blythewood
Columbia
Irmo
Chapin
Lexington
Batesburg
Leesville
Ridge Spring
Saluda
Edgefield
Johnston
Trenton
Ninety Six
Greenwood
Hodges
Abbeville
Calhoun Falls
Donalds
Iva
Belton
Honea Path
Anderson
Williamston
Pelzer
Piedmont
Greenville
Simpsonville
Fountain Inn
Travelers Rest
Greer
Taylors
Woodruff
Duncan
Reidville
Inman
Landrum
Tryon
Saluda
Columbus
Rutherfordton
Spartanburg
Union
Jonesville
Whitmire
Newberry
Prosperity
Pomaria
Little Mountain
Irmo
Chapin
Gilbert
Batesburg
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Ridge Spring
Saluda
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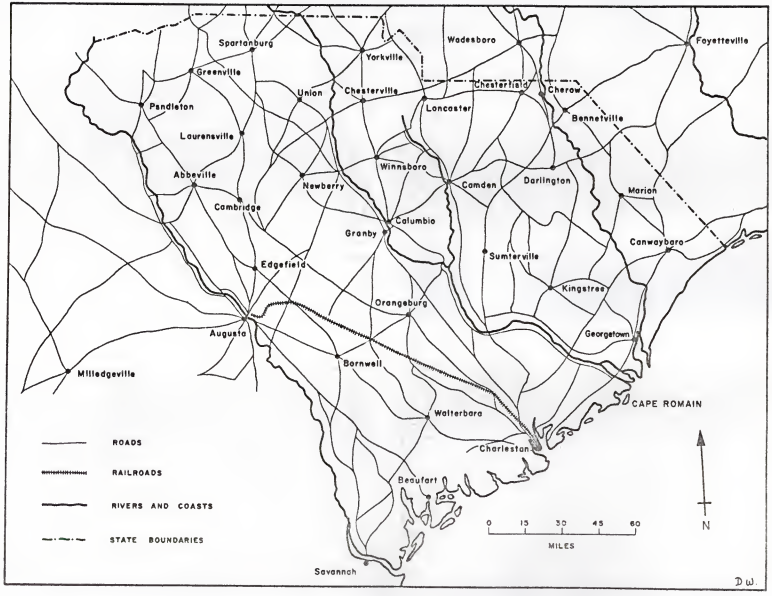
Whitmire
Newberry
Prosperity
Pomaria
Little Mountain

and Fayetteville, to give Wilmington access to trans-Appalachian trade (Fig. 7). Later, North Carolina's ambitions increased, and the 1823 legislature appropriated funds for the construction of the Buncombe Turnpike, the Plymouth Toll Road, the Old Fort Asheville road, and the Tennessee River Turnpike. In 1827 the Buncombe Turnpike connecting Greenville, South Carolina with Greeneville, Tennessee, via Asheville and Hot Springs, was completed (Lefler and Newsome, 1963, 316).

South Carolina relied basically upon her colonial road system until the second decade of the eighteenth century. At that time the rapid expansion of the cotton area into Alabama, Mississippi, and Louisiana, and a parallel slump in prices after 1819 from the competition of these new producers emphasized the need for cheaper access routes. In December 1818, the South Carolina legislature adopted a program of improvements which lasted through 1828. The initial act of 1818 appropriated $1,000,000 to be expended during four years for cutting canals, improving rivers, and building turnpikes (Goodrich, 1960, 102-103). A board of public works was created and directed to (1) construct a road from Charleston through Columbia and on across Saluda Mountain to North Carolina, (2) to improve the leading rivers, including the Savannah and Keowee and such smaller ones as expedient, and (3) to make topographical surveys of the whole state (Wallace, 1934, 400).

Figure 8. Roads and towns in South Carolina in 1832 (derived from Map, Anon., 1832).


Spartanburg
Yorkville
Wadesboro
Fayetteville
Greenville
Union
Chesterville
Chesterfield
Cheraw
Pandleton
Loancaster
Bennetsville
Laurensville
Winnsboro
Abbeville
Newberry
Camden
Darlington
Marion
Cambridge
Columbia
Granby
Conwayboro
Sumterville
Edgefield
Kingstree
Orangeburg
Augusta
Georgetown
Bornwell
Milledgeville
CAPE ROMAIN
Watterboro
ROADS
Charleston
RAILROADS
Beaufort
RIVERS AND COASTS
STATE BOUNDARIES
0 15 30 45 60
MILES
N
Savannah
D W

The State Road, as it was called, ran from Charleston, by the later Holly Hill and Cameron, to Columbia, and then up the western side of the Broad, very close to the river (Fig. 8). It crossed the Enoree and then held to that river, passing between Greenville and Spartanburg before entering Saluda Gap in Greenville County (Map, Anon., 1832). The road completely disregarded the little villages then emerging on the piedmont, attempting to draw the long-distance traffic as directly as possible into Charleston. As such, it provided a great contrast to the winding North Carolina cross-state route.

Beginning at the Charleston end, and progressing toward the interior, the work on the State Road was continued until 1829 when it was completed. A similar state turnpike and causeway was begun in 1827, branching northeastward from the main road and crossing the Santee Swamp in the direction of Camden. Some $13,000 was devoted to this between 1827 and 1830 (Phillips, 1908, 92-93). The only other road-building enterprise of importance by the state was a causeway branching from the Saluda Gap road across Vance's Swamp to shorten the route between Fayetteville and Charleston.

The roads were a demonstrated failure financially almost before they were completed. The road was never in good condition throughout its length, and the tolls, amounting to nine dollars for a four horse wagon on the round trip from Columbia to Charleston, were more than the

advantage was usually thought to be worth. The continued westward movement of the piedmont population prevented the increase of total traffic density, and the competition of the parallel river and canal traffic hindered the growth of the turnpike's relative importance. News of the successful operation of railroads caused appropriations to the State Road to be discontinued in 1829, and it soon fell into complete neglect (Wallace, 1934, 402-403). Its greatest significance, perhaps, was its indication of the South Carolina coast's desire for an exclusive artery to the northwest, an obsession from which Charleston was to suffer throughout the nineteenth century.

Georgia Roads

In Georgia the transport situation was a little different. Apart from the Savannah and Ogeechee valleys, and the immediate coastal area, the state was devoid of wagon routes prior to 1776. As the frontier receded, local roadbuilding proceeded apace, and in a number of cases the state gave financial aid to major through-routes. By 1818 an important wagon road had been constructed from Jacksonville, Florida to Jacksonville, Georgia, where it connected with a major road from Clinton and Milledgeville, to Darien and Savannah. Two roads ran south from Sparta: one via Sandersville to Darien, and a second via Louisville to Savannah. In the north, an important road had been

established by the state from Augusta to Athens, and from there the Federal government had sponsored a road to the Tennessee River at Ross's Landing (later the site of Chattanooga) via present-day Gainesville and Chatsworth (Coulter, 1933, 236). The state also established principal roads from Athens south to Milledgeville, from Augusta west to Milledgeville, and from Athens north, via the Rabun Gap and Franklin, North Carolina, to intersect with South Carolina's old route to the Overhill Cherokees. By the early nineteenth century each of the three states had major through-routes capable of carrying wagon traffic from the main ports to the mountains.

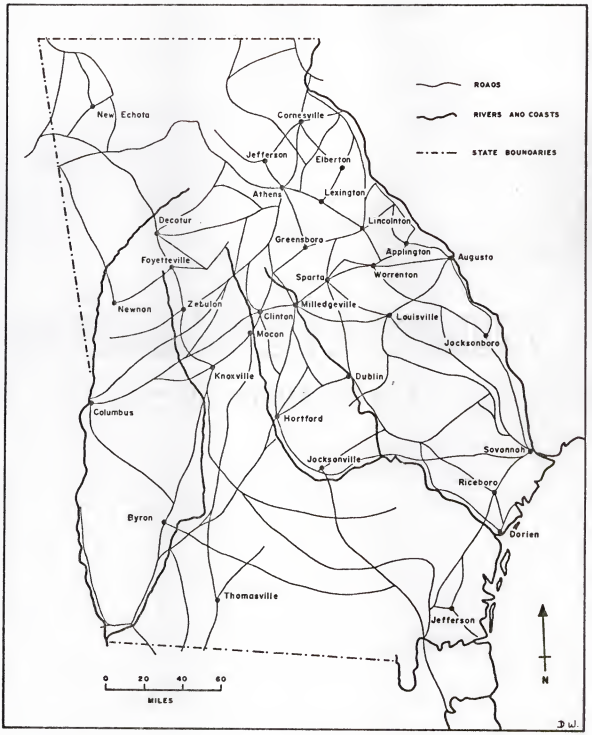
At the same time that the states and the ports were attempting to strengthen their hold on the far interior, new settlers and the Federal government were intent on establishing major routes with a different orientation. As the Indians were removed from the mountain areas, migrants from the Middle Atlantic States began to seek shorter routes to the southwest particularly from the Great Valley into the valley of the Tennessee, as far as present day Huntsville, Alabama. From this route, a number of branches were forged south across the Blue Ridge and the upper piedmont. Two of these were from the vicinity of Salem on the old Philadelphia wagon road, southwest via Lincolnton to Spartanburg, and the Roanoke Gap route through Wilkesboro, Morganton, and Rutherfordton to Spartanburg. From Spartanburg the roads ran southwest to

Athens via Pendleton or to Augusta via Cambridge (Ninety-Six). A third less-used route branched off the Knoxville-Huntsville road, crossed the Athens road at Chatsworth and passed down the Coosa River Valley to Montgomery (Lewis, 1958, 317-318).

Even so, Augusta remained the most important gateway to the southwest. Its position was bolstered after 1811, when the Federal government was responsible for cutting a road along the old Indian path from Milledgeville to Mobile. This road passed through the points that were later to become Macon, Columbus, and Montgomery. At the Chattahoochee, this route was joined by a pioneer route from Athens via Thomaston and Hamilton (Billington, 1967, 318-319) (Fig. 9). The Federal interest arose out of a desire to establish a land route for the mails between New Orleans and Natchez and the northeast, and also to integrate the southwest into the national state (Moore, 1934, 294-295). Officially the route ran all along the Fall Line via Richmond, Petersburg, Raleigh, Fayetteville, Columbus, and Montgomery. In fact, the route most frequently used by travelers was from Fayetteville to Charleston and Savannah and then up the river to Augusta where the southwestward journey was resumed.

In addition to the Fall Line road, Federal support was also given to the completion of the Upper or Piedmont road which ran from Milledgeville through Athens, Greenville, Charlotte, Salisbury, Charlottesville, and

Figure 9. Roads and towns in Georgia in 1832 (derived from Map, Anon., 1832).


ROADS
RIVERS AND COASTS
STATE BOUNDARIES
New Echota
Cornesville
Jefferson
Elberton
Athens
Lexington
Decatur
Lincolnton
Greensboro
Applington
Augusta
Foyetteville
Sparta
Worrenton
Newnon
Zebulon
Milledgeville
Clinton
Louisville
Macon
Jacksonboro
Knoxville
Dublin
Columbus
Hortford
Savannah
Jacksonville
Riceboro
Byron
Darien
Thomasville
Jefferson
0 20 40 60
MILES
N
D.W.

Fredericksburg to Washington, Baltimore, and Philadelphia (Moore, 1934, 68). Thus the population of Virginia and the Carolinas had two ways by which to reach the Federal road leading into Alabama and the Tombigbee Basin. The Federal roads were merely trails cut through the forest at the expense of the Federal government. They were poorly maintained and often difficult to travel, but they did carry a heavy traffic for that period, particularly of settlers moving to the southwest.

The massive increase in the number of roads was only one aspect of the settling of the area during the period after the revolution. To a large extent the roads performed only a secondary role in the transportation system. Of greater importance were the navigable waterways by which the majority of goods were transported from the uplands to the coast for distribution along the coast or abroad. In each of the three states, there was an increased awareness, after the revolution, of the need for improvements to the waterway systems in order to better penetrate and tap interior regions. These improvements were of two kinds. The reshaping of natural streams and the building of new canals as links and extensions in the existing river network.

River Improvements in North Carolina

In North Carolina, as early as 1784, an act was passed to promote the improvement of rivers and creeks and the prevention of obstructions to navigation. No major works were considered, though, before 1792, when a company was chartered for the improvement of the Cape Fear River from Fayetteville to the confluence of the Haw and Deep Rivers. The act stated that the improvement would be greatly to the advantage of the western part of the state, since the point of confluence is within 25 miles of the permanent seat of government and 18 miles from the place selected for the state university, 35 miles from Hillsboro, and 9 miles from Pittsboro. Between 1792 and 1830, there were a number of amendments to the original act and it is difficult to ascertain just how much of the work was completed. Certainly steamboats were plying from Wilmington to Fayetteville before 1820, but it is not certain how much water traffic materialized from improvements above Fayetteville (Weaver, 1903, 49-55).

Part of the Cape Fear below Wilmington also required considerable attention. In 1826 an appropriation of $5,000 was made out of the state's internal improvement fund for improving this lower part, and the next year a similar appropriation was made. In 1829 the Federal government took over the work. The general objective was to clear a ship canal below Wilmington, and to make the

river navigable above Wilmington for steam vessels with boats in tow. Between Wilmington and Fayetteville, steamboat passage was expected to be gained for ten months during the year. The shares of stock in the company sold easily. A town was laid off in Chatham County in anticipation of a great future, but it never developed, despite the fact that the canals operated on the upper river into the later part of the nineteenth century (Weaver, 1903, 56-57).

A second river to receive attention at this time was the Roanoke, naturally navigable from the ocean to Halifax. In 1812 an act was passed by the North Carolina legislature "for improving the navigation of the Roanoke River from the town of Halifax to the place where the Virginia line intersects the same." (Quoted in Weaver, 1903, 57.) The law provided for the opening of subscription books at Edenton, Plymouth, Windsor, Halifax, Warrenton, Oxford, Roxboro, Caswell Court House, Wentworth, German Town, and Raleigh, making it convenient for interested people all through the section to take stock.

The one great obstacle in the way of work on this route was the existence of the Grand Falls of the river, where, within 12 miles, the river descended 100 feet. To overcome these Falls, the Weldon Canal was built at Weldon's Orchard, encouraging the growth of the new town of Weldon. The company secured coastal boat passage as far as the foot of the Falls, 90 miles from the mouth of the

river. Also, by means of sluices on the upper parts of the river, boat passage was secured almost to the Blue Ridge in Bedford County, Virginia, a distance of 290 miles. One of the branches of the Roanoke, the Staunton, was improved also, for about 90 miles above Rock Landing. The river was improved, by 1828, up to Salem, Virginia, a distance of 244 miles above the Falls.

The plan was to proceed even further from the confluence of the Dan and the Staunton, up the Dan River to Danville, and then by canal and improved river into Rockingham and Stokes Counties in North Carolina. Sluicing arrangements were also extended as far as Leaksville in North Carolina, 162 miles above Rock Landing. The size of the undertaking can be judged from the fact that, up to November 12, 1827, $357,156 was expended on it. No matter how well the company may have circumvented the difficulties at the Falls or how much the river was improved, there was one obstruction that was not overcome. This was the lack of an outlet to the sea. The natural outlet for the commerce of the river would have been Ocracoke, but the shallow shifting inlet defied all attempts for permanent improvement. This factor kept the Roanoke Navigation Company from reaching the point of utility it might otherwise have reached. Also, Virginia consciously promoted the swamp canals to draw trade from this rich section to Norfolk (Weaver, 1903, 57-62).

The Tar and Neuse Rivers were the other major beneficiaries from the improvement movement. The charter for the Tar River Company dates from 1805, but in reality it did not get underway until 1816. Some attempts were made to clear the river above Tarboro, and it was made navigable for steamboats to the Falls at Rocky Mount. Few other details of development are available, except an act of appropriation of $3,500, in 1825, for removing flats below the town of Washington, thus improving its access to the ocean. This was done in the same year that the appropriation was made for removing flats below Wilmington (Weaver, 1903, 62-63). Unlike Wilmington, however, Washington was hindered as a port by its dependence on Ocracoke Inlet as a means of access to the ocean.

In 1812 the Neuse River Navigation Company was incorporated. The proximity of the Neuse to the state capital gave rise to the idea that it might be possible to extend the system of inland navigation to a point near Raleigh. In 1831 an examination of the river was ordered, from Smithfield to some point near Raleigh, to see if navigation was possible for a reasonable sum. It was argued that since a steamboat had already ascended the river as far as Smithfield, which is 28 miles from Raleigh, a little work would give a permanent steamboat navigation to the immediate vicinity of the capital. By this time though, railroads were being considered and the scheme never materialized (Weaver, 1903, 64-65).

Although the Cape Fear, Roanoke, Tar, and Neuse had the most important river projects, there were others, such as the Catawba and the Yadkin, which also received attention. Most proved to be impracticable schemes, although substantial amounts of money were expended before this was realized (Weaver, 1903, 65-67). Fortunately North Carolina experienced better success with its canal schemes. Prior to 1815 the work of improving navigation in North Carolina was left to private enterprise. Whatever was done for the purpose of keeping the rivers free from obstructions was accomplished by local overseers appointed by the county courts. The legislature, however, in an endeavor to make the fields attractive to private enterprise, granted liberal franchises to corporations to construct toll roads and canals and to improve river navigation.

Canals in North Carolina

Before 1815 the general assembly passed several acts for the construction of canals in various sections of the state. Of these, the most important were the Dismal Swamp Canal to connect the Pasquotank River in North Carolina and the Elizabeth River in Virginia, and the Clubfoot and Harlow's Creek Canal connecting the Neuse River with Beaufort. Other acts provided for a canal from the Roanoke River to the Meherrin River, and one from Bennett's Creek

to Nansemond River in Virginia, thereby forming a water connection with Tidewater Virginia, without the use of Albemarle Sound. Also, provision was made to incorporate companies to build canals from the Roanoke River to the Pamlico and Pingo Rivers (Hinshaw, 1948, 4).

Only two of the companies secured sufficient stock subscriptions for incorporation. The Dismal Swamp Canal was proposed in 1786, begun in 1793, and completed in 1814. Largely built and welcomed by the Virginia port of Norfolk, it was somewhat of a disappointment. It carried a small volume of traffic because it was inadequate for the large Roanoke River boats. In 1826 the United States government subscribed to 600 shares in the Dismal Swamp Canal Company to help enlarge it. In the winter of 1828, thirty-six years after the first dirt had been removed, the canal was completed with larger dimensions and opened to traffic.

With this enlargement, the value of produce transported and the tolls collected began to increase at a rapid rate aided by improvements on the Roanoke River itself. The Dismal Swamp Canal opened a waterway for the trade of the upper Roanoke as well as that of the Chowan, Blackwater, Meherrin, and Nottaway Rivers. Tobacco, cotton, flour, and hemp from Warren, Mecklenburg, Halifax, and Charlotte Counties flowed down the Roanoke, through Albemarle Sound and through the canal. Thus a large proportion of the trade of the Roanoke River passed through Norfolk's door increasing that port's prosperity at the

expense of the North Carolina towns (Wertenbaker, 1931, 173-178). The second successful canal project in North Carolina was the Clubfoot and Harlow's Creek Canal between Pamlico Sound and the coast near Beaufort. First planned in 1797, begun in 1819, and completed in 1830, it provided an alternative for ports like Washington and New Bern to the problematic Ocracoke Inlet entry to the Atlantic (Harlow, 1926, 294). Its weakness, in that respect, remained the fact that it could not handle ocean-going vessels.

One plan contemplated by the state government was to bring the commerce of the state's rivers together at one point, thus developing a North Carolina port capable of competing with Norfolk and Charleston. Beaufort, possessing the best harbor on the coast, was selected as having the best potential, and its development was proposed through the creation of a system of canals connecting the Roanoke, Tar, and Neuse Rivers. The plan envisaged a chain of canals extending from Williamston on the Roanoke, to Washington on the Tar, to New Bern on the Neuse, and then by way of the Clubfoot and Harlow's Creek Canal to Beaufort. Surveys were made of the tentative canal line running from the Roanoke to the Tar and the Neuse, but the plan proved too expensive and was never agreed to by the legislature (Hinshaw, 1948, 6).

River and Canal Improvements in South Carolina

The first general scheme of inland water improvements in South Carolina was passed in 1777, when $24,000 was appropriated to open communication between the Ashley and Stono Rivers and to clean and make navigable the Edisto and its forks. In 1784 money was appropriated to make the Wateree navigable to Camden, the Great Peedee to the North Carolina line, and the Little Peedee to Drowning Creek. In 1785 an ordinance was passed by the state ordering various rivers to be made navigable. In this scheme were included the Edisto, the Wateree, the Great and Little Peedee, the Broad, and Salkehatchie Rivers. These innovations were all generated by the fact that by the time of the revolution the Carolina piedmont had become well settled (Epting, 1936, 18-19).

The uplands were separated from Charleston and the coast planters, though, by interests, economy, and by difficult-to-cross watercourse barriers. Into the early part of the nineteenth century, the settlers of the upper part of the state practiced a mixed agriculture, marketing only the produce which was surplus to family demands. This surplus consisted chiefly of cereals and cattle. The Low Country planters needed this surplus. Also, Charleston merchants were worried about the orientation of up country traders to Baltimore and Philadelphia, and were envious of

the piedmont trade which was going to Augusta and Savannah. The solution to these problems seemed to lie in making the Santee River system navigable and in bringing its trade directly into Charleston. In early 1786 a group of South Carolinians, chiefly from Charleston and the coast, petitioned the legislature for the privilege of opening, at their expense, a canal from the head of the Cooper River to the bend in the Santee (Epting, 1936, 19-20).

Their request resulted in an act incorporating them as the "Company for the Inland Navigation From Santee to Cooper River." Other canal companies on the same basis were chartered in rapid succession. But the plan of granting bills to companies to encourage them to open rivers for navigation did not meet with general success. The canal between the Cooper and the Santee Rivers was the only one completed under this plan. Construction began in 1792 and was finished in 1800, when boats were able to leave Charleston and travel directly through the canal to Granby and Camden (Epting, 1936, 20).

With the turn of the century and the gradual spread of the staple crop of cotton over the state, efforts to improve the waterway system were intensified. In 1800 Governor Drayton, in his message to the legislature, recommended the improvement of inland navigation in order that products from the mountains could be brought to Charleston. In 1801 the legislature appropriated $1,000 to make the Broad and Pacolet Rivers navigable. The next

year the house of representatives appointed members residing in each circuit court district to examine all rivers and creeks in their respective districts and report to the following session "the necessity, practicability and probable expense of rendering the same navigable." (Quoted in Epting, 1936, 21.) As a result, the standing committee on inland navigation in 1804 recommended that $50,000 be appropriated annually for improvements to the watercourses of the state. That proposal was voted down when, the following year, the legislature appropriated $10,000 for opening the Saluda, $4,000 for opening the Broad, $4,000 for opening the Peedee, $2,000 for opening the Wateree, $20,000 for cutting a canal across North Island, and $10,000 for opening the Savannah when Georgia chose to match this amount (Epting, 1936, 21). The money was spent with unclear results, but certainly all the major streams were made navigable to the Fall Line and some above.

A continuing interest in improvements was maintained particularly by Charleston (Phillips, 1908, 83). In 1810 the Committee on Inland Navigation of the state reported that it had taken under consideration the importance of adopting a general program of navigation. It recommended a plan which would immediately connect the Peedee and the Santee, the Santee and the Cooper, and the Edisto and Ashley Rivers with canals and locks (Epting, 1936, 22). The program, however, rested in the hands of committees until 1815, when the return of peace accompanied a rapid rise in the price of cotton.

In 1817 the state of South Carolina launched a massive program of internal improvement. Of the approximately $1,900,000 expended between 1817 and 1829, about one-sixth, or $314,206, was allotted for roads and $217,788 was applied to the improvement of navigation of rivers below the Fall Line. Some $1,264,005 was spent on the piedmont rivers, all but $18,431 being devoted to the construction of eight big canals around the major obstructions of the Broad, Congaree, Saluda, and Wateree Rivers (Hollis, 1968, 29). By the fall of 1820, work was underway on two canals on the Saluda -- a canal on the Congaree at Columbia, and one at Lockhart's Shoals on the Broad River. Additional contracts had been let for canals at Landsford and Fishing Creek on the Catawba, and plans for a third, the Wateree Canal, were being prepared. By 1821 work had begun on three canals on the Catawba Wateree, one of the Saluda canals had been completed, and construction was continued on the Columbia and Lockhart Canals (Hollis, 1968, 32).

The program was launched amid a great deal of criticism. According to Hollis,

> The scheme was highly political from the beginning; several commissioners and contractors were members or former members of the General Assembly. Criticism emerged from the commercial rivalry of Columbia, Camden, and Cheraw (Chatham) and from the towns on the Peedee and Wateree, which resulted in the initial concentration of effort on the Broad and Saluda . . . As a general rule Peedee and Wateree spokesmen did not, at this time, question the feasibility of the inland

> navigation plan as long as their streams received a proper share of the funds. Nevertheless, some critics did maintain that the state should concentrate on roads rather than rivers, especially if the roads would benefit their own particular localities (Hollis, 1968, 32).

By 1823, however, deficiencies in the system were beginning to come to light. Severe droughts between 1817 and 1819 had dried up one section of the Santee Canal and forced it to close. Also, low water had at times caused steamboats to be stranded in Columbia and Augusta (Hollis, 1968, 35).

In 1824 several of the canals were completed. The Columbia Canal, which ran for three miles from Young's Mill at the junction of the Broad and Saluda Rivers, down the east bank of the Congaree to a point near Rocky Creek, was an immediate success. The Saluda Canal, at the river mouth, and the canal at Dreher's Shoals, some 20 miles above Columbia, were completed in 1821 but could not be fully utilized until the completion of the dam on the Broad River, which enabled boats from the Saluda to enter the Columbia Canal. In 1824 the Saluda was sluiced from Dreher's Canal to the Abbeville County line, and a lock was constructed for the dam at Lorick's Mill, 35 miles above Columbia. In March, 1825, the Saluda was opened to Abbeville and Laurens districts, and it was announced that a boat with 40 bales of cotton could descend from Cambridge (Ninety-Six) to Charleston (Hollis, 1968, 35-36).

The Broad River Canal at Lockhart, begun in 1820, was opened in 1826. The four canals on the Catawba-Wateree

were the most ambitious of the public works, and they went into operation in 1826. In 1827 the general assembly's committee on internal improvements reported all works almost completed and that a navigation of more than 2,000 miles had been opened with water transportation to every district in the state except Greenville. The Saluda was claimed to be navigable for 140 miles above Columbia, the Broad for 110, and the Catawba and the Wateree from Camden would open boat traffic from Charleston to Morganton, North Carolina, a distance of 300 miles. They suggested that the Broad and the French Broad, and the Savannah and the Tennessee, might be linked by navigation canals (Hollis, 1968, 37). Almost all claims proved to be exaggerated, however, because problems in parts of the stream courses discouraged the use of the majority of new installations. Only below the Fall Line were the rivers navigable for major shipments. Also the state lost interest in the maintenance of its waterways after 1833, when the Charleston to Hamburg railroad quickly proved its superiority to river transportation.

Georgia River and Canal Schemes

In Georgia the story was not dissimilar. The same emphasis was placed upon riverine improvements and with about the same measure of success. The state of Georgia had, from very early times, carried out a program of

improvement on its principal rivers by removing snags, driftwood, and sandbars. The first move made by Georgia to improve the upper Savannah, its only major river before the nineteenth century, was in 1786. In that year the legislature passed a bill to promote navigation from Rae's Creek just above Augusta, to the mouth of the Tugaloo River, and up that river to Tugaloo Old Town, a point near where Toccoa Creek flowed into the Tugaloo (Coulter, 1965, 50). In 1795 the legislature passed another law establishing a lottery to raise money to be used to remove obstructions in the Savannah from Vienna down to Augusta.

In 1799 a company was incorporated to carry out further work since

> the improvement of the inland navigation of every country is of primary importance to its inhabitants, and few countries enjoying greater natural advantages than this state for the extension of commerce, and it being conceived that the clearing out and the removing obstructions in that part of Savannah River, between the town of Petersburg and the city of Augusta, would greatly conduce to the convenience and interest of the inhabitants settled in the north and northwestern part of this state (Quoted in Coulter, 1965, 52).

The company known as the Savannah Navigation Company was almost entirely a Petersburg, Georgia undertaking, and never really got underway.

In 1810 Georgia chartered the Oconee Navigation Company to improve the navigation of the Oconee River both below and above the Fall Line at Milledgeville. The company was empowered to build locks, dams, and canals and to

collect tolls on all traffic on the river after completion of improvements. The approach of the war with Great Britain probably prevented the beginning of work by the company, and by the end of the war it had disappeared (Coulter, 1933, 234).

The fate of the Broad River Navigation Company, chartered in 1810, was similar. As a result of the poor performance of private enterprise in these cases the state, in 1817, proposed a general policy calling for state appropriations for improving navigation wherever feasible, and setting up an internal improvement fund of $250,000. As so often happened, however, nothing seems to have come from all the activity. In 1824 the commissioners for that part of the Savannah River from Petersburg up to Andersonville (South Carolina river port at the confluence of the Keowee, Seneca, and Tugaloo), reported that they had improved the river sufficiently for boats carrying 80 bales of cotton to navigate the river (Coulter, 1965, 57).

The improvement of the Savannah was a major achievement because the river offered difficulties beyond the physical problems of snags and sandbars. Of greater consequence was the Savannah's role as the border between Georgia and South Carolina. Because of this, each state had an equal interest in the navigation of the river, and each felt that the other had an equal obligation to bear the expense for its improvement. The two states were never able to reach agreement, though, on which part to improve

at what time. South Carolina was more interested in the upper reaches of the river, Georgia in the lower. Each state was fearful that it might use public money unwittingly to help the other (Coulter, 1933, 235). Finally South Carolina constructed a railroad to Hamburg which made her determined not to deter traffic along it by improving the lower Savannah. As a result of the arrival of the railroad, the Georgia legislature lost interest in river improvement, turning its favors to the railroads (Jones and Dutcher, 1890, 452-453).

Before 1830 canals played practically no part in Georgia's efforts to get goods to market. In 1818 three canals were chartered. Two of them near the mouth of the Altamaha were of no importance. The third, the Savannah Ogeechee and Altamaha Canal, was the only canal in the state ever to attract much attention or to consume much money. By connecting the Savannah, Ogeechee, and Altamaha Rivers near their mouths, its promoters had planned to attract, to the port of Savannah, the traffic that was borne from the upper reaches and tributaries of all the streams.

In 1826 the city council of Savannah agreed to the cutting of the canal through city lands. They were persuaded by a letter from the president of the canal who stated that the canal would

> surely open new sources of profit to enterprising men, and thus add to the aggregate wealth of the city. It is an enterprise

> undertaken as a measure of the public benefit imperiously required by the declining commerce of the City (Quoted in Harden, 1913, 311).

The city also subscribed $7,000 to the stock of the company and later increased its holdings to $10,000. The state aided to the extent of $44,000. The city was interested in the project for a number of years after its completion to the Ogeechee, in 1831, but does not seem to have profited greatly from its investment. The dream of extending it to the Altamaha was never realized, and after the railroads came it was abandoned as having been a failure from the beginning. The Ogeechee simply did not generate a heavy volume of trade.

There were four other significant proposals for canals in Georgia during the period: one by the Mexican Atlantic Company for a canal across the state from the Ocmulgee to the Flint, a second from north Georgia to the Tennessee River systems, and a shorter canal between the town of Brunswick and the Altamaha. The Mexican Atlantic Company secured the right, in 1825, to construct some sort of transportation route across the state to link the Atlantic streams with those flowing to the Gulf (Coulter, 1933, 237). There is no evidence, in spite of the charter, that the company was ever capitalized, and certainly the canal was not constructed. The project's importance lies in the fact that it was the first proposal for a penetration route from the southeast Georgia coast to the southwest part of the state. Around 1828 a plan to build a canal between the Tennessee River and the Alabama River

was broached (Abernethy, 1922, 80). A study, survey, and report was made, and a connection between the Ocoee and Conasauga, or between the headwaters of the Hiawassee and Conasauga, was said to be favorable to the building of a canal. If built, the canal would have joined the Coosa and Tennessee Rivers, and made these streams a part of one long unbroken route of transportation for small boats from eastern Tennessee to the Gulf (Lewis, 1958, 322-323). Before final plans for the Ocoee Conasauga Canal were completed, however, railroad popularity destroyed the idea.

In 1825 a Board of Public Works was constituted in Georgia, which immediately established two committees to investigate the feasibility of two canal routes -- one between the Tennessee River and the head of navigation on the Oconee or Ocmulgee, the second between Savannah and the Flint River along the Fall Line. The reconnaissance along the Fall Line concluded that the route was not well suited to canals but easily adaptable for horse railways. The other committee recommended a canal through the valley of Chickamauga Creek, but survey by leveling showed the actual relief too problematical. The canal proposal was quickly transformed into one for a railroad (Phillips, 1908, 109-112).

The promoters of the Brunswick and Altamaha Canal worked for 15 years to construct an artificial waterway between the Altamaha River and the Port of Brunswick, resting their arguments on the natural advantages of that

port's harbor. During the eighteenth century Brunswick's harbor facilities were of little value except to the planters of the immediate area. The nearest navigable stream was the Altamaha, 12 miles to the north across swampy lowlands. Darien, on the northern side of the Altamaha estuary, served as an inadequate terminal port for the traffic of the river. The obvious advantage of diverting the river traffic of the Altamaha through a canal did not escape Brunswick.

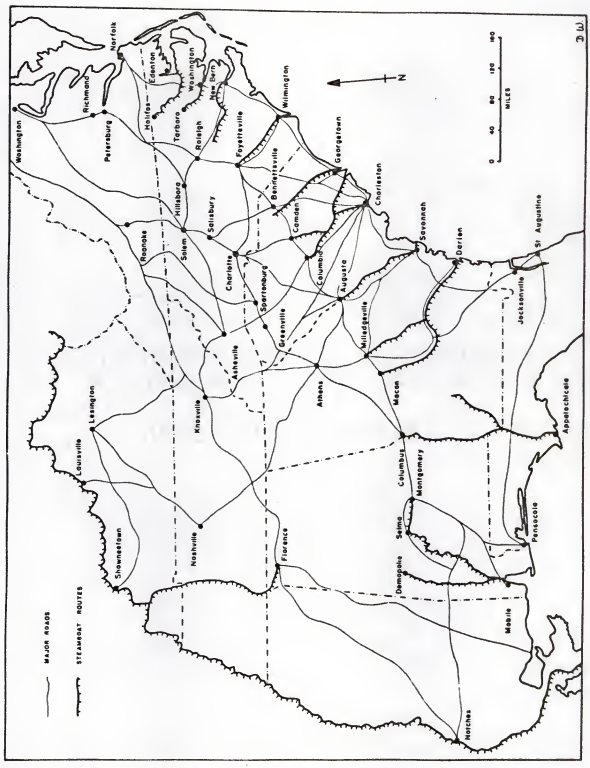
In 1826 a group of local residents obtained a charter to build a canal or railroad from the Altamaha to the Turtle River. Difficulty was experienced in raising money, and in 1830, the state appropriated $10,000 in aid construction. In 1832, in an attempt to establish Brunswick's fitness for development, the governor appointed a committee to investigate the economic potential of the area. Reviewing the commerce of Georgia, the investigators claimed that the Altamaha River was the principal outlet for the commerce of the up country. "Savannah we fear, "they said in their report, "is prostrated by the completion of the railroad to Augusta." (Quoted in Steel, 1955, 226.) After surveying the proposals for a railroad or a canal between the Altamaha and Brunswick, they concluded that it was highly advisable for the state to grant aid. In 1834, though, with little evidence of work achieved, and railroad fever running high, the state withdrew its support and the canal was never completed (Steel, 1955, 222-226).

Summary

Paradoxically, despite the loss of invested capital in river improvements in the three states, the period from 1775 to 1830 was one of outstanding importance of the rivers as highways of commerce. This was a result of the appearance of the steamboat after 1815, on most of the area's large streams (Fig. 10). With their ability to carry considerable loads, they confirmed the rivers as the premier transportation lines of the region, at least below the Fall Line (Goff, 1928; Jones and Dutcher, 1890, 464 471; Lefler and Newsome, 1963, 300; Yates, 1971, 372-376). They also established the hegemony of the Fall Line towns and the coastal ports which handled river shipments. It was the steamboat which brought prosperity to Columbus, Albany, and Appalachicola, to Macon, Milledgeville, and Darien, to August and Savannah, to Hamburg, Columbia, Camden, Cheraw and Charleston, to Fayetteville and Wilmington, to Smithfield and New Bern, to Rocky Mount and Washington, and to Weldon, Edenton and Norfolk.

From the coastal ports, transport lines fanned out across the Atlantic to other U.S. ports and abroad. From the inland ports, roads radiated to the interior collecting and distributing goods for river transhipment (Fig. 10). By 1830 this pattern, begun in the Colonial Period, had largely been completed. Major lines of penetration from the coast focused on the large ports by way of the main

Figure 10. Major roads, towns, and steamboat routes in Georgia and the Carolinas ca. 1830 (derived from Maps, Brazier, 1833; Anon., 1832, and 1834).


MAJOR ROADS
STEAMBOAT ROUTES
Washington
Richmond
Petersburg
Norfolk
Edenton
Halifax
Tarboro
Washington
New Bern
Raleigh
Wilmington
Fayetteville
Cheraw
Camden
Georgetown
Charleston
Savannah
Darien
St. Augustine
Jacksonville
Pensacola
Apalachicola
Mobile
Natchez
Louisville
Lexington
Cincinnati
Nashville
Florence
Huntsville
Selma
Montgomery
Columbus
Macon
Athens
Milledgeville
Augusta
Columbia
Greenville
Spartanburg
Asheville
Charlotte
Salisbury
Hillsboro
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0 40 80 120 160
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rivers. Lightly interwoven on the warp of penetration lines from the coast, were less trafficked penetration lines from the northeast to the southwest. These were produced by the determined migration of people towards the southwest, and by a Federal government, anxious to integrate the new lands to the west with the rest of the nation. Trade centers were emerging at the junction of these penetration lines (Stone, 1914, 564; Oliphant, 1933). In a sometimes different context, county seats were producing their own form of urbanization. One aspect of this pattern was an apparent aversion of county towns to the major waterways. The reasons for this are readily apparent in the spatial structure of counties. Waterways most frequently were used as county boundaries. Court houses were generally positioned centrally in the county. The communities that developed around them thus tended to be high on interfluves rather than in valleys.

CHAPTER 4

THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS IN DETAIL, PART 3, 1830-1865

Introduction

The expansion of piedmont agriculture and the rise of the cross-roads villages and country stores had an important effect upon prevailing traffic patterns. Competition for the Back Country trade became more intense as marketing centers multiplied. Services moved consistently closer to their consumers as populations became more dense and capable of supporting them. Coastal cities, which had maintained wagon yards at earlier periods to facilitate direct retail trade relations with Back Country people, found themselves cut off from this by small interior towns which intercepted the wagons on their journeys from the Back Country. The seaboard cities thus were compelled more and more to shift their attention to shipping produce received from interior towns and country stores and to supplying these with merchandise.

This parallel process of urbanization and specialization was so widespread and obvious, that coastal cities

and interior towns were fully aware of the changes that were taking place. A Charleston newspaper in 1827 noted the main economic problem facing that city.

> It is known to us that all the retail trade of Charleston, which was a few years ago the life and spirit of our town, has been cut off and intercepted by a chain of small towns situated at the foot of our hilly country, and extending across the state from North Carolina to the Georgia boundary line. You will recognize in this chain the towns of Cheraw, Camden, Columbia, and Hamburg. Formerly our back-country people had to look to this city for their supplies even of small articles. Then they were neither wealthy nor numerous, now they have greatly increased in number, wealth, and luxury; and their wants are so general that the country stores find encouragement and business, limited it is true, at first, but now extensive . . . This was no strained or artificial result; but was the natural progress of natural things. If Charleston yet retained her very great retail trade it would be strong evidence of our State lagging behind her sisters in the solid improvements of life . . . We must be content to do the retail trade of our immediate neighbors only. If we act wisely, however, we may secure the entire wholesale trade of these towns, as well as that of the adjoining states. But to do this we must rouse our sleeping energies. . . . (Quoted in Phillips, 1908, 133-134)

This statement records a development which was to become even more pronounced. In 1832 Salisbury, North Carolina, for example, had not made any real effort to acquire the Back Country trade which passed, as it had always done, through the town on the way to Fayetteville. The local paper was then primarily interested in the competition between Fayetteville, North Carolina and Cheraw, South Carolina for the Back Country trade and its

potential effects on Salisbury. Cheraw had begun to draw most of the country business and the paper was concerned that Salisbury might lose its position as an intermediate shipping point in the Back Country trade with Fayetteville. In the 1840's, however, Salisbury store keepers started to intercept this trade, and the local editor began to note the large number of mountain wagons in the town and the cheapness of goods available in the local stores. By 1848 the Salisbury paper was complaining that the village of Statesville, with 300 people and only four stores, was cutting in on the established connections of Salisbury businessmen with farmers in counties north and west of Salisbury (Atherton, 1949, 93-94).

The process of trade expansion was therefore cumulative. Population on the outer edge of the frontier moved rapidly, outpacing in most cases the inland movement of supply centers. They were, as a result, forced to rely on difficult journeys to distant markets. Slowly, intermediate wagon yards and country stores appeared in the more densely populated areas behind the frontier to facilitate the process of marketing frontier produce. These groups of stores gradually became small towns, which equipped themselves to service the wagon trade that had previously flowed to seaboard communities. They also began to retail goods to the farmers of their immediate neighborhood. Wherever agricultural productivity permitted the development of rural towns, the long trips to

market, which had characterized settlement at an early date, declined in favor of local handling of farm crops and supplies. By 1830 there were a multitude of such local trading centers on the piedmont and the coastal plain.

The shifting traffic patterns generated by these centers stimulated the development of a transportation network which would better cater to them. The river systems, particularly in the uplands, now became completely inadequate for the demands of trade. Repeated disappointments with canals and roads were a major factor arousing sentiment in favor of railroads in all three states. Basically, the railroad programs evolved from the same causes that had given impetus to the earlier improvements movement -- the desire of the ports to increase their commerce, the necessity for general readjustment due to the decline of cotton, and the need for better communication among various sections of the states. Allied with these causes discontent with the results of earlier programs of transportation created a situation where the advantages of railroads as carriers could be effectively promoted. The result was a massive expansion of that transportation form after 1830, which completely overshadowed other communications activity.

The South's First Railroad

The first expression of public support for railroads in the Southeast was that for the Charleston and Hamburg project, the first totally steam-operated line in the country. This support materialized to a large extent because the decade after 1820 was one of severe economic decline in the city of Charleston. The average annual duties collected in the four years, 1815-1818, were $1,407,058 and in the seven years, 1819-1825, only $679,712. Charleston was not getting her share of rising cotton exports and was losing her traditionally dominant position in the retail trade to the towns of the Fall Line (Wallace, 1934, 404). According to a committee of the Charleston Chamber of Commerce in 1828:

> Charleston has for several years past retrograded with a rapidity unprecedented. Her landed estate has within eight years depreciated in value one half. Industry and business talent driven by necessity have sought employment elsewhere. Many of her houses are tenantless and the grass grows uninterrupted on some of her chief business streets (Quoted in Derrick, 1930, 8).

A transportation system that could provide easy access to Charleston from the cotton belt of western South Carolina and east Georgia was thought to be the most effective remedy. Railroad successes in England pursuaded Charleston that her future lay with the new technology, and the line to Hamburg was proposed. The direction of the road was determined by two facts -- the level nature of the

terrain, and the spatial organization of Charleston's existing trade area.

It has been shown above that Charleston merchants were aware, by 1827, that the growth of the Fall Line towns -- Columbia, Camden, Augusta, and Cheraw -- had cut into their retail business. They also knew that the port was not getting its share of increased business due to the spread of cotton production to the interior. Railroads to these towns, however, would be unlikely to improve Charleston's trading position a great deal. Rivers and canals already afforded a means of bringing cotton from lands around the Broad, Wateree, and Peedee, to Charleston. The city was still getting their import/export business and seemed likely to continue to do so. The new road was given priority over alternative Columbia and Camden routes simply in an attempt to divert the Savannah River trade to Charleston (Smith, 1958, 158-159).

There was a distinct lack of enthusiasm for the line in areas other than those through which it was projected to pass. Subscription books were open for four days at Columbia, Camden, and Hamburg without a share being taken. Charleston, including the city government, the banks, and insurance companies, supplied all the money. It was a Charleston effort to revive Charleston. In Hamburg's case, the lack of interest was due to the fact that its connections with Savannah and Charleston, via the Savannah River, were reasonably satisfactory. The other towns were

little interested in a project to improve the economic welfare of Charleston, and even less in promoting the interests of Fall Line business rivals (Smith, 1958, 159). Also the road did not appear to offer any real prospect of filling the transportation needs of the uplands.

The railroad between Charleston and Hamburg (Fig. 8) was completed in 1833, and Charleston's commerce increased after its construction. Due to higher freight charges, however, an inclined plane at Aiken, and the refusal of Augusta and Georgia to allow the South Carolina line to cross the Savannah River, the railroad did not divert much Savannah trade (Wallace, 1934, 405-407). An increase in the production of cotton in South Carolina was the main reason for the ports increase in prosperity. Even so, Charleston was delighted with the operation of the Hamburg road and began to consider a transmontane line that would tap the rapidly expanding agricultural regions of the Middle West.

Other Early Lines in South Carolina

It was hoped that such a connection would make Charleston not only the chief commercial center of the South, but also assure its position as the dominant east coast seaport with extensive inland connections and a volume of traffic rivaling that of New York and the other major Atlantic ports. The main line of the projected

railroad was to start at Charleston, then run through middle South Carolina, and western North Carolina, over the mountains and through the valleys of eastern Tennessee and Kentucky to a terminal at Cincinnati. Its potential linkages raised even greater prospects. Cincinnati had either completed or begun connections by river or canal with western Pennsylvania, the rest of Ohio, Indiana, Illinois, and other areas adjacent to the Great Lakes. The more far-sighted South Carolina railroad promoters looked to a time when large areas of the Midwest would become tributary to Charleston instead of other Atlantic coast cities (Smith, 1958, 160-161). The Cincinnati and Charleston Railroad Company was approved by charter in South Carolina in 1835. Charleston subscribed a substantial amount of money but the other states through which the line was to pass, particularly Tennessee and Kentucky, showed little interest (Folmsbee, 1939, 117-167). As a result, the idea foundered at this time for primarily financial reasons, although it was revived at frequent intervals up to the end of the century (Way, 1931).

One consequence of the Cincinnati-Charleston project in the 1830's was the completion of a spur of the South Carolina Railroad to Columbia. This branch was intended eventually to be the stem for the transmontane line and was notable for its indirect alignment with respect to Charleston. In order to provide the most economical

construction, the line was laid in such a way as to provide the shortest link between a point on the South Carolina Railroad northwest of Charleston, and Columbia and Camden. The result was a line, completed in 1842, running southeast from Columbia, along the Saluda to a point southwest of Camden, where it turned southwest to cross the Saluda and strike the Hamburg line at Branchville. From Branchville, trains then turned southeast again for Charleston.

Immediately after the Columbia branch was completed, Camden began to campaign for her own connection to the line. The railroad company agreed to put up a number of shares equal to that subscribed by private individuals if a right of way could be secured. These conditions were met, and the line was completed in 1848. It had the distinction of being the only railroad completed in South Carolina before 1861 which did not receive financial assistance of some sort from the state (Smith, 1958, 171).

The First Piedmont Lines in South Carolina

Completion of the lines to Columbia and Camden made the construction of feeder lines into the piedmont feasible. The projection and building of a group of upland railroads was performed in a single movement after 1845. Adjacent communities began to bid against each other to secure the routing of proposed roads for their local advantage. The outline of the railroad network as actually

built was the result of the victory of the most determined (usually the wealthiest) of these competing localities in getting the main lines for themselves. It was also a reflection of the defeat of weaker communities whose only resort was the building of branches from the main line for their own service.

The three towns at the terminal points of the South Carolina Railroad conducted active and competitive campaigns for selection as the terminals of proposed piedmont lines. Columbia defeated Hamburg and Camden, in each instance, to become the focus of new lines (Phillips, 1908, 336-337). A project with Charlotte, North Carolina as its upper terminal was launched in 1846. Immediately, local promotion began in each town and district which might be affected. The main objective of towns was to raise subscriptions, in order to have voting strength in the initial meeting of subscribers. Nearly all the subscriptions obtained, except those from Charlotte, were conditional upon the company deciding to select a route through that subscription's particular locality. At the organizing convention in Charleston, in 1847, delegates were present from Richland, Fairfield, Chester, York, Kershaw, and Lancaster Counties, and from Charlotte and Charleston. The Kershaw and Lancaster delegates were insistent upon Camden as the terminus; the rest either favored Columbia or were neutral (Phillips, 1908, 337-338).

The factor determining the location of the southern terminus was not mileage, grades, or costs but the size of the subscriptions raised by competing localities. The route from Camden was demonstrated to be shorter and cheaper. When it came to the voting, however, the Camden route received the support of only 2,776 shares, while 6,670 shares were in favor of a Columbia-based line (Phillips, 1908, 338).

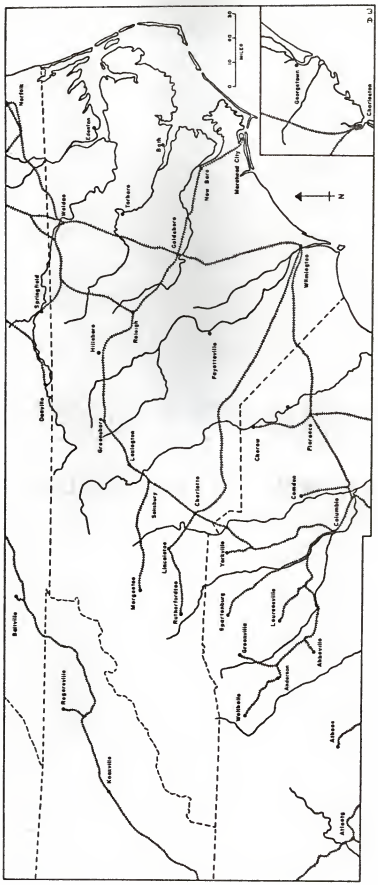
The alignment of the Greenville and Columbia Railroad was determined in much the same way. Its charter was granted in response to a demand from the northwestern part of the state for a rail outlet. This demand was greatest in those counties lying along the Saluda River: Newberry, Laurens, Greenville, Edgefield, Abbeville, and Anderson. The villages of Newberry, Laurens, and Greenville (county seats) stood on a single southeast-northeast-oriented watershed. A railroad built along the ridge would provide a direct connection between Columbia and all the villages and their counties without incurring heavy bridging or filling costs. The use of this route, however, would mean that the other three counties of Edgefield, Anderson, and Abbeville could only be reached by a parallel line, by crossing the Saluda with branch lines, or by utilizing an extremely circuitous route. Greenville, as the most prominent settlement of the mountain fringe, seemed at the outset to offer the most profitable terminus and the straight ridge the least costly route. The company was

therefore given the name Greenville and Columbia (Phillips, 1908, 340-341).

The required capital could only be raised, however, with the help of the western counties, and so in 1848 the road was routed around the Laurens district. Anderson was made the initial terminus until more money could be obtained to enable the line to recross the Saluda. In the meantime several projects were launched to link with the Greenville and Columbia, including the Laurensville and Newberry, the Spartanburg and Unionville, and the Abbeville branch (Fig. 11). In 1850 the state added an extra subscription to enable the Greenville road to actually reach Greenville. The line was completed to Anderson in 1853 and to Greenville the following year (Phillips, 1908, 341-344).

The area between the forks of the lines linking Columbia with Charlotte and Greenville produced steady demands for railroad connections. Most vociferous were the districts of Union, Spartanburg, Laurens, and York with their county towns of the same name. After the final location of the roads to Charlotte and Greenville, each of these counties began to promote independent railroads to join them with one of these main lines. The people of Union and Spartanburg combined in building a single railroad for the common service of both districts. Laurens and York could not agree, however, and entirely separate local lines were built (Phillips, 1908, 346-349).

Figure 11. The railroad network of the Carolinas in 1865 (derived from Map, Nicolson and Lindenkohl, 1865).


Norfolk
Edenton
Bath
Tarboro
Weldon
Goldsboro
New Bern
Moorhead City
Springfield
Hillsboro
Raleigh
Fayetteville
Wilmington
Danville
Greensboro
Lexington
Charlotte
Cheraw
Florence
Camden
Columbia
Salisbury
Lincolnton
Yorkville
Morganton
Rutherfordton
Spartanburg
Laurensville
Greenville
Abbeville
Anderson
Walhalla
Athens
Rogersville
Knoxville
Altoona
Georgetown
Charleston
N
0 10 20 30
MILES

Charleston's Feeder Lines

The remaining railroad gap between the fourth of the South Carolina Fall Line towns and the coast was filled by the Cheraw and Darlington line. The town of Cheraw enjoyed navigation on the Peedee for only half of each year but controlled the trade of most of northeast South Carolina and much of south-central North Carolina. In 1837 the town tried to generate a railroad to deep-water navigation on the Waccamaw River at Conwayboro but found subscription money lacking. A decade later, when the Wilmington and Manchester Railroad had been launched, Cheraw's financial task was eased and the city decided to build to that line. The point of connection was determined by Charleston, which offered $100,000 if Cheraw would locate its road to strike the Wilmington and Manchester at its junction with Charleston's Northeastern Railroad. The Northeastern Company also offered $25,000 to be paid in reduced transportation charges. Thus encouraged, the Cheraw and Darlington Railroad was organized and completed as specified by Charleston in 1855. In spite of its connections, the line was never of more than parochial significance. By the time it was built Camden, Charlotte, and Fayetteville -- its chief competitors -- were all equipped with a railroad outlet (Phillips, 1908, 349-351).

The Northeastern road, with which the Cheraw line connected, was as distinctly the result of Charleston's efforts as had been the early line to Hamburg. The company was organized in 1852 when the city of Charleston subscribed $400,000, the Charleston banks $80,000, and the state of South Carolina a block of securities which yielded $220,000. Construction was begun in 1854 and completed in 1857. Only one town, Kingstree, lay on the road, and the traffic supplied by the Cheraw and Darlington was shared by the competing Wilmington and Manchester (see below). The Northeastern Railroad ran through a productive but small plantation area at Monk's Corner and another on the Santee, but both of these had water routes on hand which served most of their freight needs. The line was built in the hope of resuscitating Charleston's economic fortune, but, because of the overall natural poverty of the area through which it ran, it never had any chance of success (Phillips, 1908, 354-355).

Another feeder line attempted by Charleston was the Charleston and Savannah Railroad, a cotton carrying line. It was one more of Charleston's efforts to increase her trade, but it was limited from the beginning in being simply a port-to-port railroad. It received poor support from Savannah because the city saw little prospect of deriving traffic from it. The project was launched at a convention in Charleston in 1853. In 1854 an experimental survey was made at the expense of the Charleston city

corporation. A 110-mile route was selected through level country. A detour around Port Royal Sound and the Sea Island network of creeks, avoided excessive bridging and banking costs. Subscribers, though, were slow to come forward.

By the fall of 1855, only 103 shares of $100 each had been taken by individuals in Charleston, 90 in Savannah, and 315 along the route. The city of Charleston, however, subscribed $260,000 and the state $270,000, and in 1857 the state guaranteed the company's bonds to the amount of $5,000 per mile. As a result, the road was completed in 1860. Competitive freight rates were established between the two cities and free transfer was offered for cars coming from beyond Savannah. It was expected that Charleston's superior harbor and her connections with foreign shipping lines would attract export cotton over the new route (Phillips, 1908, 363-364).

The other major rail route built in South Carolina before 1865 was the Blue Ridge road, which represented another effort to build a railroad connection between South Carolina and the Midwest. Like the attempt made nearly 20 years earlier, it failed, achieving only an extension of 33 miles to Walhalla in the extreme northwestern part of the state (Way, 1931, 33-46). The immediate reason for the road was the inability of the South Carolina Railroad to secure a connection with the Georgia Railroad at Augusta. It had been allowed to cross

the Savannah in 1852, but permission to physically connect with the Georgia line was refused by the city of Augusta.

The South Carolina Railroad then contended that, even should connection be made at Augusta, it would not prevent the diversion of the growing Tennessee trade to that city and Savannah. It argued that a more direct line from the northwest to Charleston would increase the commerce of the city, develop upland agriculture, and enhance the political power of the state. Some opposition was expressed in various areas of the state on the grounds that the chief benefits would accrue only to Charleston. As usual at this period, however, Charleston was able to solicit state aid on its behalf.

The line was projected to branch from the Greenville and Columbia Railroad at Anderson. From there it was to run through Pendleton and Walhalla, and then via tunnels to the extreme northeastern corner of Georgia at Rabun Gap. From Rabun Gap it would descend the valley of the Little Tennessee River to Knoxville, Tennessee where it was thought adequate connections could be made with the Midwest. The route was direct and relatively short (150 miles) and for that reason alone possessed great appeal. The problem of obtaining adequate financing and the physical obstacles to engineering proved insuperable, however, and in the end construction was limited to the first short 33 miles. The transmontane route remained only an idea (Smith, 1958, 174, 185-191).

Although, by the outbreak of the war in 1861, many schemes for railroads in South Carolina had been abandoned, the two major purposes of railroad construction in the period had been largely accomplished. Charleston's business was expanded, and almost every part of the state was given a railroad connection to the coast (Fig. 11). Charleston increased her trade not only within the state but with Tennessee, Mississippi, Alabama, and Georgia through Savannah and Augusta, and from North Carolina through the connections to Cheraw and Charlotte (Lindstrom, 1970, 107-110).

The combined value of Charleston's exports and imports increased from $13,381,585 in 1850 to $22,764,907 in 1860, or by more than 71 percent (Smith, 1958, 191). A further effect was the increased growth of a number of inland towns along the new traffic arteries. This growth was particularly marked in towns with water connections. Anderson, Abbeville, Laurensville, Newberry, Spartanburg, Chester, Sumter, and Florence grew in importance and became large marketing centers with banks, supply stores, and other service facilities. In addition, smaller towns, such as Prosperity, Belton, and Branchville, and a number of others important to local areas, developed at junctions or other strategic staging points along the lines.

North Carolina's First Railroad

As in South Carolina, the railroad was quickly seized upon in North Carolina as the answer to the acute transportation problems which had developed there after the revolution. A series of newspaper articles, published in a book in 1828, discussed the superiority of railroads over canals and turnpikes, and advocated that the state government take the lead in building a railroad from Beaufort via New Bern and Raleigh across the central part of the state to the Tennessee line. The railroad, which was to be financed by an increase in the state poll tax and by individual stock subscriptions, would, it was claimed, channel the trade of the state to New Bern and Beaufort (Weaver, 1903, 35-40).

The book received wide attention, becoming a subject of discussion by individuals, newspapers, and public speakers. Almost every town and county wanted a railroad. After 1830 the legislature chartered many railroad companies which were authorized to sell stock and to build lines, but it did not provide any aid at first except for the expenditure of $7,000 for railroad surveys in 1832 (Weaver, 1903, 77-84). The first railroad chartered in the state, and actually constructed, was the Petersburg Railroad (see below) which had only a small section in North Carolina tapping the Roanoke valley trade, and which was in reality a Virginia road. Feeling threatened,

North Carolina's business interests began, in the same year, 1833, to demand a response to the Virginia challenge and, as a consequence, the number of charters increased.

The cost of railroad-building was so great, however, and private capital so reluctant to invest in unproven facilities, that only two of the railroad companies chartered between 1830 and 1835 sold enough stock to begin construction. They were the Wilmington and Raleigh, and the Raleigh and Gaston Companies (Dozier, 1920, 56-66). The Wilmington and Raleigh Company, chartered in 1834, was chiefly a Wilmington enterprise to connect North Carolina's leading port with its capital city (Howell, n.d., 87-90). When the citizens of Raleigh failed to subscribe their share of stock, the company decided to build the railroad from Wilmington to Weldon on the Roanoke River where connection could be made with the Petersburg Railroad. In 1854 the legislature changed its name to the Wilmington and Weldon.

Upset by the shift in terminus, Raleigh businessmen promoted and obtained a charter for the Raleigh and Gaston Company in 1835. This road was to run from Raleigh to Gaston (on the Roanoke River near Weldon) to connect with the railroad from Petersburg, and was strongly supported by Virginia interests. Both companies were organized and operated as private corporations and neither originally expected aid from the state. Eventually both were obliged to ask the state for assistance in order to complete their

lines. In 1837 the General Assembly agreed to purchase over half a million dollars of Wilmington and Raleigh stock and later extended its interest in the road to nearly a million dollars. In 1838 and 1841 the state endorsed the bonds of the Raleigh and Gaston to the extent of $800,000. With this state aid, the Wilmington and Raleigh Railroad -- 161 miles long and the longest railroad in the world at that time -- and the Raleigh and Gaston, were completed. In 1848 they were the only railroads in North Carolina (Brown, 1928, 31-62).

Other Early Railroads in North Carolina

After the opening of the Wilmington and Raleigh, and the Raleigh and Gaston, there was an increasing demand for more railroads, particularly in the isolated western part of the state, where money was scarce and political strength relatively weak. The building of railroads in areas without local capital required a change in state railroad policy. Governor Morehead, in 1842, told the legislature that it should build a system of roads in order to make North Carolina economically independent of Virginia and South Carolina. In 1849 Governor Graham proposed that the state bear half the cost of building an extension of the Raleigh and Gaston to Charlotte, with branches to Goldsboro and Fayetteville.

This proposal was defeated by the Wilmington and Weldon interests who regarded the system as a feeder for Virginia and South Carolina markets. A western proposal (championed by Concord and Salisbury interests led by R. Barringer and J. Ellis), to incorporate a company to build a road from Charlotte to Danville and to connect with the Charlotte and Columbia, seemed acceptable because no state aid was asked. The business communities of the eastern part of the state labeled it a gift to Virginia and South Carolina interests and opposed it. The westerners, whose main concern was simply to acquire a rail outlet of any kind, then surrendered the Charlotte and Danville project in a compromise more acceptable to the politically-powerful east. The result was a bill, passed in 1849, establishing the North Carolina Railroad Company to run from Goldsboro through Raleigh to Charlotte.

This solution suited the west because it got its first railroad and the east because it provided a potential feeder for the two major eastern roads. It differed from the Central Railroad idea of 1828 in its rambling route, and by leaving out the Beaufort section and the extension to the Tennessee line. Political rather than engineering considerations influenced the circuitous path which crossed the major rivers near their headwaters. Although engineering problems were less on this line, the cost of increased mileage more than outweighed those savings. Of greater significance was the fact that the road was aligned

through Hillsboro, the home of Graham; Greensboro, the home of Morehead; Salisbury, the home of Ellis; and Concord, the home of Barringer. The 223-mile railroad was opened to trains in 1856, the first road to penetrate the North Carolina Piedmont (Brown, 1928, 63-94). Villages along its route rapidly became more prosperous causing the first appearance of what was to become known in the twentieth century as North Carolina's "industrial crescent."

One idea in the minds of the framers of the North Carolina Railroad bill had been that Wilmington would be a major beneficiary, gaining most of the western freight traffic via the Wilmington and Weldon. Due to the roundabout route of the North Carolina road, however, there was a close approach to the Virginia roads and they were able to siphon most of the piedmont traffic. As a result, in 1855, the Wilmington and Weldon Company advertized that goods handled in connection with the North Carolina Railroad would be transhipped via Goldsboro either way without charge. The company also pointed out that Wilmington was 45 miles nearer to Raleigh than was Norfolk, over the Portsmouth and Roanoke Railroad (see below), and that the freight charge on a barrel of flour was 29 cents less than to Portsmouth. Portsmouth secured most of the traffic, however, by operating a more reliable service. In July 1855 it was reported that of 1,150 barrels of flour shipped from Hillsboro in six weeks, 783 went to Portsmouth

and Norfolk and 76 to Petersburg. The connection with the Virginia towns was made via the Raleigh and Gaston (Brown, 1928, 93-94).

Early Railroads in Southern Virginia

It is virtually impossible to explain the evolution of the North Carolina railroad system without reference to that of Virginia, with which it was integrated. Railroads in Virginia first originated from the long-established trade competition of three cities -- the port of Norfolk, and the Fall Line towns of Richmond and Petersburg. Norfolk, in particular, had seen Richmond outdistance it through control of the James River trade. With Petersburg presiding over the commerce of the Appomattox valley, Norfolk was forced to look else where for a hinterland. The failure of the Dismal Swamp Canal to attract the upper Roanoke trade caused keen disappointment. The necessity of transferring goods at Weldon, together with the delays and dangers of the trip down the lower Roanoke through Albemarle Sound, up the Pasquotank and through the canal, discredited this route. The bulk of the produce still went overland to the James or the Appomattox, and so to Richmond or Petersburg (Wertenbaker, 1931, 182-183).

In 1829 Petersburg began to promote a railroad to the upper Roanoke. A company was organized, the town subscribed $130,000, aid was asked from the state and Federal

governments, and the actual work of construction began. The rails ran south through Dinwiddie, Sussex, and Greenville Counties to a point on the Roanoke in North Carolina just below the Great Falls. This project spurred Norfolk into action.

> Why, most of her people never saw a ship. At the same time we must not lose sight of the fact that they may draw off the Roanoke trade from our canal, if this railroad goes through. The question is this: Will Norfolk within hail of the sea, or Petersburg on the tiny Appomattox, become the market of North Carolina and the Roanoke Valley? We must bestir ourselves and lay down a railroad of our own to the Roanoke, if we hope to retain our share of this trade (Quoted in Wertenbaker, 1931, 183).

Accordingly, the Portsmouth-Weldon railway was projected to run 76 miles through Norfolk, Nansemond, Southampton, and Northampton Counties to the Roanoke near the terminus of the projected Petersburg line. The people of Norfolk subscribed liberally: the city took $100,000 in stock, Portsmouth added $50,000, and the work of construction was begun, despite opposition from the Fall Line towns. In June, 1837 the line was completed, the bridge over the Roanoke was built, and the trains ran to Weldon (Turner, 1947, 363-364).

The results were disappointing, and the bulk of the traffic continued to go to Petersburg. This was mainly because the Petersburg road outmaneuvered its rival by intercepting the traffic of the upper Roanoke by means of a branch from Hicksford, on their main line, to Gaston

(on the river above the Falls). There was no reason why Roanoke valley farmers should take their produce over the Falls, or through the locks to Weldon, when they could transfer them to Petersburg trains higher up the river. Hope was revived in Norfolk, however, by the construction of the railroad from Wilmington to Weldon, to which Norfolk citizens subscribed liberally. This opened up a new north-south connection all the way from Baltimore to Wilmington. Passengers could leave Baltimore on the Chesapeake Bay steamship lines, transfer at Norfolk to the Portsmouth line for Weldon, and then take the train for Wilmington. The Petersburg Company, cut off from this trade by the fact that its terminus at Blakely was on the north bank of the Roanoke, attempted to purchase a half interest in the bridge at Weldon. Protracted negotiations followed in an effort to agree on the price, the Petersburg trains using the bridge in the meanwhile. In the end the Petersburg company declined to purchase. When the bridge was closed to them, they made connection with the Wilmington line by sending their passengers by wagon and boat to Halifax, a serious inconvenience. Debt on the bridge remained unpaid, however, and the creditors sold it to the Petersburg, which then closed it to all traffic. This quickly brought an end to the Portsmouth road. For some months an effort was made to continue service to the North Carolina border, but in the spring of 1845 the trains had to be taken off and the road closed down (Dozier, 1920, 90-101).

Norfolk then turned her attention for a time to obtaining a direct connection with the Midwest. Again this was thwarted in the legislature by Petersburg and Richmond interests who feared a loss to their own trade. In desperation Norfolk proposed to reopen the Portsmouth line to link with the line being built from Raleigh to Gaston. Reconstruction began under the name of the Seaboard and Roanoke Railway. At Weldon the Seaboard connected again with the Wilmington Railroad, and through north-south passenger traffic was reinstated (Wertenbaker, 1931, 190-196). Norfolk, though, was most interested in western trade. The Gaston terminus of the Raleigh and Gaston was only 12 miles from the Seaboard terminus at Weldon. So the Gaston and Weldon was formed to fill the gap. It was completed in 1853, and trains began to run through from Raleigh to Norfolk. At the same time, work began on the Roanoke Valley Railway from Ridgeway on the Raleigh and Gaston, to Clarksville on the upper Roanoke River. This branch line was expected to drain not only Granville and Mecklenburg Counties but the valleys of the Staunton and Dan as well (Wertenbaker, 1931, 198-199).

Although this connection improved Norfolk's position, the railroad situation remained essentially unfavorable to her. Norfolk's one line had to compete with the Petersburg and Roanoke for the North Carolina trade, while the Richmond and Danville was reaching out to the upper Roanoke to divert the traffic of that region to the James.

The Southside Railway, which with the Virginia and Tennessee line drained southwest Virginia, had its terminus at Petersburg. All central Virginia was tributary to Richmond and parts of the Great Valley, and all northwestern Virginia looked to Baltimore. Norfolk was completely cut off from the railway system of the state to which it belonged. In 1851 the city made a determined effort to secure a railway to Petersburg. This would link her with the Virginia and Tennessee at Lynchburg, which in turn was linked up at Bristol with the railway system of Tennessee. The railroad was chartered in spite of the hostility of Petersburg, and the opposition of Richmond which felt traffic would be drawn from the James River and Kanawha Canal at Lynchburg. Norfolk and the state subscribed virtually all the money required. After construction Norfolk asked for an extension of the Norfolk and Petersburg to Charlottesville. This would give a connection with the Virginia Central and divert western traffic from Richmond to Norfolk, but Richmond managed to block that attempt in the legislature (Wertenbaker, 1931, 199-203).

The Albemarle and Chesapeake Canal

Still another important line of communication was opened between North Carolina and Norfolk in 1859 with the completion of the Albemarle and Chesapeake Canal. The project had been contemplated for years. The Dismal Swamp

Canal was too small for steamers, and the farmers of northeastern North Carolina were loud in their complaints. When at last North Carolina began to consider plans for making a deep cut to the ocean, through the sand bar at Nags Head, so that large vessels could have access to both Albemarle and Pamlico Sounds, Norfolk became alarmed. A canal was proposed across the swamp of the North River, into Currituck Sound, then through another canal into Albemarle Sound. Opened in 1859, the Chesapeake and Albemarle Canal played an important role in strengthening Norfolk's position as the chief port of northeastern North Carolina (Hinshaw, 1948, 40-56).

The domination by the Virginia towns of North Carolina commerce was a constant stimulation to North Carolina's commercial communities to try to establish their independence. Soon after the construction of the North Carolina Railroad got underway, business interests in the state began to discuss its extension to the Atlantic and to Tennessee. The Central Railroad idea, first broached in 1828, was revived. The North Carolina road was considered within the state not only as part of the old central scheme but also as a cross-state connection between the Raleigh and Gaston and the Charlotte and South Carolina Railroads. One group thought that it would help build up Wilmington by working in cooperation with the Wilmington and Raleigh Railroad. Many citizens of the piedmont counties regarded it as two-thirds of the much

desired cross-state connection between Danville and Charlotte. The general belief, though, was that the road possessed some potentialities as a link in the central railroad system from the Atlantic to Tennessee.

North Carolina's Cross-State Line

Citizens of the Beaufort district took the lead in agitating for an extension to the east. On December 9, 1850, they presented to the legislature a "Memorial on the Extension of the Central Railroad to the Town of New Bern." (Brown, 1928, 95-96.) It argued that the Beaufort district, which was in itself one of large production of corn, hogs, cotton, and turpentine, was largely cut off from the trade of the counties to the west of New Bern. Because of the railroad developments in Virginia and South Carolina, the trade was being carried off to those states, while the prosperity of New Bern had been steadily declining. As an illustration it was pointed out that North Carolina grew 17,000,000 pounds of tobacco annually, scarcely a pound of which passed through North Carolina ports. Virginia manufactured and shipped it, got credit for growing it, and received the profit from its production. The Beaufort District was importing for home consumption such northern products as flour, lime, pork, butter, hay, potatoes, and tobacco. The same products, the city said, could have been purchased from North Carolina producers,

if an adequate means of transportation had been available. The legislature was asked to provide for extending the North Carolina Railroad from Goldsboro to New Bern, by chartering a company and by giving the same proportion of aid as had been given to the North Carolina road. By 1852 the west was also ready with a proposal to extend the North Carolina Railroad from Salisbury to the Tennessee line (Brown, 1928, 95-98).

On November 2, 1854 an internal improvement convention was held in Salisbury at which 15 counties were represented. They passed resolutions asking the legislature 1) to take two-thirds of the stock of the Atlantic and North Carolina and the Western North Carolina Railroads, 2) to take two-thirds of the stock of a company to build a railroad from Beaufort via Fayetteville to Salisbury and then west, and 3) to take two-thirds of the stock of the Atlantic Tennessee and Ohio Railroad which was to run from Wilmington, or from the Wilmington and Manchester Railroad, via Charlotte to the Tennessee border. Whereas there had been bitter contests over state-aid measures in the past, the bills to charter the Atlantic and North Carolina and the Western North Carolina Railroads, with the state owning two-thirds of the capital stock, passed the legislature with sweeping majorities (Brown, 1928, 102).

There was a great deal of discussion, however, as to which towns the western road should pass through. A

very strenuous effort was made to have Lexington designated as the eastern terminus. Davidson County interests wanted it to run from Lexington via Mocksville and Taylorsville to Asheville. They argued that Salisbury was too far south for the terminus, and that a road from Salisbury would divert traffic to the South Carolina line via Charlotte. These arguments were not accepted, and the railroad began at Salisbury and went to Morganton via Statesville and Newton (Brown, 1928, 103).

There was also a great deal of debate concerning the extension of the road beyond Morganton. This line was projected to thwart Georgia and South Carolina interests, who were threatening to penetrate the western North Carolina area and enter Tennessee. Particularly feared was the Greenville and French Broad Railroad chartered by South Carolina, in 1854-1855, to build a line from one of the South Carolina roads, along the French Broad valley, to a connection with the East Tennessee and Virginia Railroad beyond Paint Rock, Tennessee. Agreement proved difficult. Decisions on whether the road should traverse the mountains, on where the connections should be made, and on whether the gauge should be North Carolina's 56½ inches (standard gauge), or the 60 inches generally accepted elsewhere in the South, were postponed by the Civil War. One reason why the scheme was not adopted was the opposition of the coastal areas, which saw no advantage to themselves. They felt that any trade would flow

to Norfolk and Portsmouth in Virginia. When the Civil War broke out, the road lacked five and a half miles of reaching Morganton (Brown, 1928, 126-147).

The Atlantic and North Carolina was also subject to a great amount of political haggling with respect to its location. This was due to land speculation around Beaufort Harbor. Arguments were put forward that the cheapest line to construct would avoid both New Bern and Beaufort, the original proponents of the line, and terminate on the west side of Beaufort Harbor. New Bern was able, through its greater capital resources and by financial manipulation, to place itself on the route, but smaller Beaufort was less fortunate. It lost, in bidding for the terminal, to the real estate development of former Governor Morehead at what came to be known as Morehead City. A new port was thus created, which was considered to have very bright prospects. It grew rapidly after completion of the road in 1857, but its prosperity was cut short by the War Between the States and it never recovered. The attempt by North Carolina to establish a central port and trunk trade route proved to be a complete failure. Little trade was diverted from its traditional channels (Brown, 1928, 106-125).

Other Lines

Two other important lines were constructed in North Carolina during the period. The legislature in 1854 chartered a company to build a railroad from Wilmington via Charlotte to Rutherfordton. The idea of this line was to provide eventually a direct connection between Wilmington and Tennessee by extending the line from Lincolnton to Jonesboro, Tennessee. The line was a direct competitor with the North Carolina Central route. By 1861 it had succeeded in building only the few miles between Wilmington and Moss Neck, but by 1865 it was complete. Of greater significance to Wilmington's development was the port's promotion of the Wilmington and Manchester Railroad. Built in an attempt to expand Wilmington's trade hinterland at the expense of Charleston, the line was run almost due west from Wilmington to tap the Camden and Columbia branches of the South Carolina Railroad at the village of Manchester, South Carolina. Work was begun in 1850 when the subscriptions stood as follows: from individuals, $650,000; from the town of Wilmington, $100,000; and from the state of South Carolina, $200,000 for the purchase of rails. The road was quickly pushed to completion and at once began to enjoy a moderate traffic in passengers, cotton, farm supplies, and especially naval stores (Phillips, 1908, 352-354).

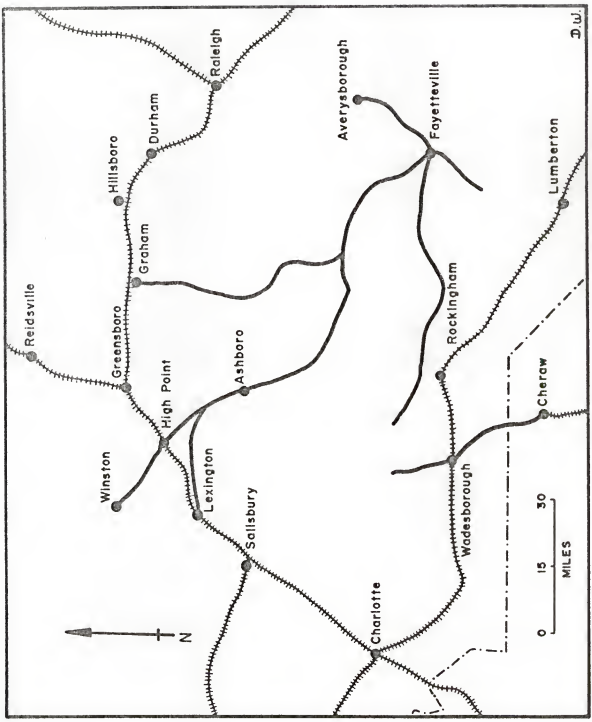
At the outbreak of the war North Carolina was closer to a railroad penetration of the Blue Ridge than South Carolina, and with very limited resources had built some 850 miles of railroad (Fig. 11). For their construction the state government had spent or committed more than $10,000,000. Much smaller amounts had come from private, county, and municipal subscriptions. Although the earlier program of state aid to roads and inland navigation was supervised by the Board for Internal Improvements, the much larger expenditures for railroads were made without central direction. Charters, and their granting and non-granting, were a reflection of the structure of political power in the state assembly.

The advocates of a planned railroad system favored an east-west trunk route from the coast to the Appalachians. Actual investment showed no consistent pattern but reflected the strength of the traditional economic forces stimulating trade to Virginia and South Carolina outlets, and the desire for a through route along the coast from Washington to South Carolina and beyond. The most successful of the state-aided roads was the Wilmington and Weldon, which crossed the state from north to south and was later joined with its Virginia connections to form the Atlantic Coast Line Railroad (see below). Support of the Raleigh and Gaston which took so much of the public funds, appeared "suicidal" to those who thought that the prime object of state policy should be to bring trade to

North Carolina ports (Dozier, 1920, 54-55). Over half the state's investment was in three roads which formed a connected route from the coast to the interior; but of these the North Carolina Railroad was built on such a sweeping curve that much of the line was later to find its greatest usefulness as part of the north-south Southern Railway. There was, in fact, little justification for North Carolinians ever to believe they could create a second Charleston on their coast simply by building a trunk line railroad.

An extensive nation-wide movement for plank roads resulted in the chartering of 84 private companies in North Carolina in the 1840's and 1850's but only about a dozen were builtwith a total mileage of about 500 miles. Fayetteville was the chief center of the plank roads, being a terminus of roads extending to the south, west, and northwest (Fig. 12). The most important plank road ran 129 miles from Fayetteville through High Point and Salem to Bethania in Forsyth County. This was the longest plank road ever constructed. Plank roads, costing about $1,500 per mile, were only about one-tenth as expensive as railroads, and provided all weather and easy transportation to markets. They were important feeders of freight to the railroads. For a few years the plank roads prospered; but the planks rotted and wore out quickly, most of them by 1860, and the roads were never rebuilt. Their income failed to pay the original cost of construction

Figure 12. The plank roads of North Carolina in 1865 (derived from Map, Nicolson and Lindenkohl, 1865).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High Point
Winston
Lexington
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Ashboro
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Graham
Durham
Raleigh
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before general rebuilding was necessary (Starling, 1939, Parts 1 & 2).

Georgia's First Railroads

In Georgia the first pressure for railroads came from the piedmont, where growing market centers were anxious to obtain better connections with the coast. The town of Eatonton was the first to secure a charter to build a railroad to Augusta in 1831. Other towns in the area though, desired similar connections, and in 1833 the Eatonton charter was repealed and a new corporation was chartered under the title of the Georgia Railroad Company. It was empowered to build a railroad, with a main stem westward from Augusta, and to construct branches to Athens, Madison, and Eatonton respectively (McGuire, 1934 A, 4-7). Beyond Athens an extension was contemplated which would run north of Lawrenceville, across the Chattahoochee, between the sources of the Tallapoosa and the Etowah, to the Coosa River, and then to the Tennessee at Decatur, Alabama, where a railroad was reported to be under construction to the Mississippi (Phillips, 1908, 229).

Most of the money for the road was raised in Athens. Augusta gave the railroad little support at first, because it feared that it might become only a way station on a railroad line that would carry passengers and freight from Athens to the sea at Charleston. Aided by banking

privileges allowed it in 1835 and the financial backing of Charleston, the line was able to push ahead without Augusta's support, and it was opened to Athens and Madison in 1841. After the road had been built and its value seen, Augusta lost no time in acquiring a controlling interest, protecting her trade interests by refusing to allow a bridge connection across the Savannah with the South Carolina Railroad (Jones, 1890, 482-484). The Eatonton branch was never completed because the town became more interested in a direct rail connection with Savannah, which was proposing to start its Central line.

The idea of continuing the Athens branch through to the Tennessee was dropped as early as 1836, when the state decided to build the Western and Atlantic Railroad (see below) (Phillips, 1908, 237-238). This road was devised to run from the Tennessee River to a point in Dekalb County most suitable for its connection, with branches to be extended with state aid, from the Georgia Railroad, from the Monroe line at Forsyth, from Milledgeville, and from Columbus. The final choice of the terminus was considerably to the south of Athens, however, and made an extension of the Madison branch, the cheapest route for the Georgia Railroad. The extension was completed in 1845 with the aid of new subscriptions from Augusta and Charleston. At the same time the headquarters of the company were moved from Athens to Augusta, which then controlled the stock (McGuire, 1934 A, 6-7). Athens, the initial

proponent of the road, was thus relegated to a subsidiary position on a branch line. It was a position from which it had difficulty escaping, because the combination of votes from Augusta and Charleston and the other main line towns could be relied upon to defeat any proposals Athens made for the extension of its branch line.

Before the Georgia Railroad was proposed, Savannah was much less eager than Macon and Milledgeville and the cotton districts to the north of those cities to discuss a possible railroad across the pine barrens (Yates, 1971, 372-376). In distinct contrast to corresponding developments in the Carolinas, the seaport followed, rather than led, in the early stages of the movement. Savannah already enjoyed the advantage of a river connection with the Georgia piedmont, which Charleston did not, and it had a certain prospect of a large share in the trade of upper Georgia as long as the state's river courses were not replaced by artificial traffic routes. Until the railroad threat to her hinterland was proven, Savannah had no strong incentives to raise the large amounts of money necessary to build railroads. With the completion of the Charleston and Hamburg in 1833, no city in Georgia saw more clearly the threats and advantages of railroad expansion than Savannah (Phillips, 1908, 253).

The Central of Georgia

With the Georgia Railroad virtually an extension of the Charleston and Hamburg, Charleston had obtained a rail connection with the heart of upper Georgia, which would drain away some of Savannah's established trade. The question became not whether but where to build from Savannah. Columbus, Macon, and Milledgeville all solicited Savannah's favors, but Macon promised to supply more subscription funds. In 1833 a group of Savannah businessmen secured a charter to run a railroad to Macon, hoping to assure for themselves, through it, the trade of the central and western part of the state. Of the 12,308 shares sold in the company, the city of Savannah took 5,000 and the city of Macon 2,500 (Dixon, 1961, 2). Milledgeville and Sandersville were the other major contributors.

A northern and southern route to Macon were surveyed, and it was reported by the engineer that the southern route was the better one, being shorter by 30 miles and less expensive in construction costs by half a million dollars (Harden, 1913, 325-326). The northern route was adopted by the stockholders, however, for two other reasons. One was that the more highly populated area along the Ogeechee would be advantageous to the railroad by bringing in revenue while the road was being constructed. The second was that the northern route would approach more closely the piedmont cotton centers such as Eatonton

and Madison, which were being attracted to Augusta (Dixon, 1961, 2-4).

The line was completed to Macon in 1843 and immediately began to tap the rich new cotton lands of the region (Harden, 1913, 326-327). Between then and 1861 it built short feeder lines, bought or leased other roads, and by the outbreak of the Civil War, was the major railroad system of the south. The Central of Georgia, as the stem line was known, ran only from Savannah to Macon. The branches constructed from Macon to Atlanta, to Columbus, and to southwest Georgia, and the local spurs to Milledgeville and Thomaston, were built by separate companies. Most of these enterprises, though, were either heavily subscribed to by the Central of Georgia, or shared management to the point where they were part of the system from their completion.

Places throughout the piedmont, with the exception of Augusta, were interested in connecting with the Savannah line. Augusta felt that on the one hand a railroad to Savannah would be a distinct advantage, but on the other it would probably divert the trade of the towns and plantations southwest of Augusta away from the town to Savannah. For some years the latter was the most weighty consideration. Also the Georgia Railroad Company, at Charleston's instigation, threw its influence against any proposal for an Augusta connection with the Central. Both Eatonton and Milledgeville raised subscriptions for connections to the Central line (Phillips, 1908, 264-266).

The Monroe Railroad Company, chartered in 1833, was extended, with Savannah and Central of Georgia money, from Forsyth through Barnesville and Griffin to Atlanta to connect with the state's Atlantic and Western road. Its name was then changed to the Macon and Western. Thomaston had to be content with promoting the Upson County Railroad, a spur from Barnesville via Moore's Crossing. Columbus was anxious, almost from its founding, for an eastward alternative to the Chattahoochee, but lost some years in debating the most preferable route to Macon and in searching for financial backing. West Point, La Grange, and Newnan, in rich cotton counties, wanted railroad outlets and for a time favored connections with Macon, until the extension of the Georgia Railroad toward Atlanta and the launching of the Western and Atlantic raised other possibilities (Phillips, 1908, 266-274).

The Central of Georgia's Extensions

The development of railroads in southwest Georgia began in 1845 when a railroad was chartered southwest from Macon to the Chattahoochee River to connect there with a road projected to run northeast from Pensacola. Branches to Albany and Columbus were proposed as a part of the road from Macon. The Central of Georgia and the city of Savannah provided the financial base for the company. In 1852 the road was completed to the west bank of the Flint

River, 53 miles from Macon, where the town of Oglethorpe enjoyed a brief prosperity before the railroad was extended (Phillips, 1908, 274-278).

By 1852 the Muscogee Railroad, promoted by the city of Columbus, was reaching toward Fort Valley and a Junction with the Southwestern. Two companies, the Mobile and Girard, and the Columbus and Opelika were preparing to build railroads respectively southwest and northwest from Columbus, and this offered the hope of through traffic to the east. In 1852 the citizens of Americus and vicinity subscribed and paid for $15,000 in stock to secure an extension to that city, and soon afterwards, the people in and around Albany took similar action to bring the rails to their town (Phillips, 1908, 278-279).

A branch of the Southwestern southwestward from Americus was provided in 1857. The Southwestern had offered to build the line on condition that subscriptions be raised from each section of the proposed line. These subscriptions were promptly forthcoming to the amount of $633,000 and the company began to extend its road through Dawson and Cuthbert to the Chattahoochee River near Fort Gaines, and also a branch from Cuthbert to the Chattahoochee opposite the Alabama town of Eufala. By the middle of 1860 the construction of all the Southwestern Company's lines had been completed, except for a bridge which was then projected to cross the Chattahoochee at Eufala. The policy of requiring local subscriptions for

linking roads was surprisingly successful after the Central of Georgia had built its initial stem.

Despite Augusta's disinterest, the Central of Georgia and the city of Savannah decided in 1847 to put up the money for a railroad into Augusta from the south (Harden, 1913, 329). The road -- 54 miles in length from Millen on the Central, to Augusta -- was completed in 1854. At Augusta the Central met with its great rival, the Georgia Railroad, with which it competed for control of the trade of the Georgia cotton belt, as well as for the traffic of the Western and Atlantic. Competition between the two companies for tributary traffic was inevitable. The two roads lay parallel for about 100 miles at a distance of only about 40 miles apart, and the intervening country furnished most of each road's local traffic.

Extensions of the Georgia Railroad

The issue giving rise to the greatest irritation between the two companies was the proposal to extend the Warrenton spur of the Georgia railroad into a branch to Macon (Phillips, 1908, 287-291). This would establish a direct line between Macon and Augusta and introduce a threat from Charleston to the traffic of south-central and western Georgia, which Savannah considered itself to have preempted. The towns of Sparta and Milledgeville, which lay on the proposed route, favored the plan -- and so did

Macon, Augusta, and Charleston -- but the decision to build lay with the Georgia Railroad. For several years the Georgia Railroad used the plan as a warning to the Central to stay within its own territory, but in 1860 the Georgia Railroad committed itself to the project. The angered Central planned a retaliatory penetration to Union Point to tap Athens, but the war arrived before the project could be implemented. It was finished after the war as the Macon and Warrenton (Jones and Dutcher, 1890, 498).

The Georgia Railroad was active in aiding the financing of other lines after 1850. The chief roads fostered by the company, with the amounts invested in 1862, were the Nashville and Chattanooga, $250,000, and the Atlanta and La Grange Railroad, $310,000. The first was expected to bring food stuffs from the West via the Western and Atlantic, and the latter to bring cotton from western Georgia and the Alabama region. Other stock subscriptions by the Georgia Railroad Company were: 1) to the East Tennessee and Georgia Railroad, $10,600; 2) to the Rome Railroad, $123,150; 3) to the Augusta and Waynesboro Railroad, $109,000; 4) to the Milledgeville Railroad, $124,000; and 5) to the Georgia Western, $2,500 (Jones and Dutcher, 1890, 493). None of these subscriptions were made as investments but all for the purpose of developing feeders to the Georgia Railroad.

The Georgia Railroad Company's own branch lines to Warrenton, Washington, and Athens were not notably

remunerative themselves, but were profitable chiefly as feeders to the main line (Phillips, 1908, 248). The branch to Athens, of which much was expected in the early years, proved especially disappointing. Athens was located near the northern edge of the cotton belt and did not have much cotton to ship. It sent some grain and meat down the road; but that traffic did not yield much profit. About 1858 it succeeded in arranging a better connection of its tracks with those of the South Carolina Railroad. It also began to take steps in 1860 to increase the ocean-shipping facilities between New York and Charleston. Its hope was to make this route more attractive for both passengers and freight, thus promoting increased use of the Georgia Railroad by the Nashville and Memphis merchants (Phillips, 1908, 258).

The Transmontane Lines

The Western and Atlantic Railroad was the most important link in the well-devised railroad network which made Georgia the focus of Southeastern rail routes and Atlanta the gate city between the corn belt and the cotton belt (Coulter, 1933, 253-256). Built by the state because of an absence of private funds in the relatively undeveloped area, and because competition for the route by established roads might have favored a particular part of the state, the line was conceived as a funnel which would

enable produce from the Midwest to reach all parts of Georgia. Routes were being projected to radiate from Ross's Landing on the Tennessee (Chattanooga), and the Atlantic and Western was intended to link these with roads from Macon, Columbus, Milledgeville, and Augusta.

The southern terminal was chosen as a convenient meeting point on the piedmont for the converging roads (Phillips, 1908, 308). The work, begun in 1831, was completed in 1851. Its most notable result was the contribution it made to the development of the junction town of Atlanta, which witnessed rapid growth after the Georgia Railroad reached there in 1845 and the Macon and Western arrived in 1846. A branch line from the main trunk of the Western and Atlantic was soon completed to Rome. Aided by steamboat traffic on that river, it attracted trade from the Coosa valley and northeastern Alabama to Charleston, its major investor (Lewis, 1959, 95-99). At Chattanooga the Western and Atlantic connected with the Nashville and Chattanooga, the Memphis and Chattanooga, and the East Tennessee and Georgia (Cotterill, 1924, 401-402).

In the latter 1850's the policy of state investment, though not of state construction and operation, was revived for another trunk line project, for which somewhat similar arguments could be made. The trade of the district west and southwest of Savannah was contended for by neighboring ports even more vigorously than that northeast of Charleston. The main challenge to Savannah came from

Brunswick. There were a number of abortive attempts to produce canals and railroads in Brunswick before funds were finally secured in 1855 to build the Brunswick and Florida Railroad from Brunswick to Albany and later to Pensacola (Steel, 1955, 224-239). By this time a Savannah corporation had entered the field with a rival project, the Savannah and Albany Railroad Company chartered in 1847 and renamed in 1854 the Savannah Albany and Gulf. The two companies prepared to build simultaneously from their respective and rival ports to Albany and the Gulf. Neither company had the capital necessary for the completion of its work but the commercial hostility of the ports prevented a coalition for a common purpose (Coulter, 1933, 246-247).

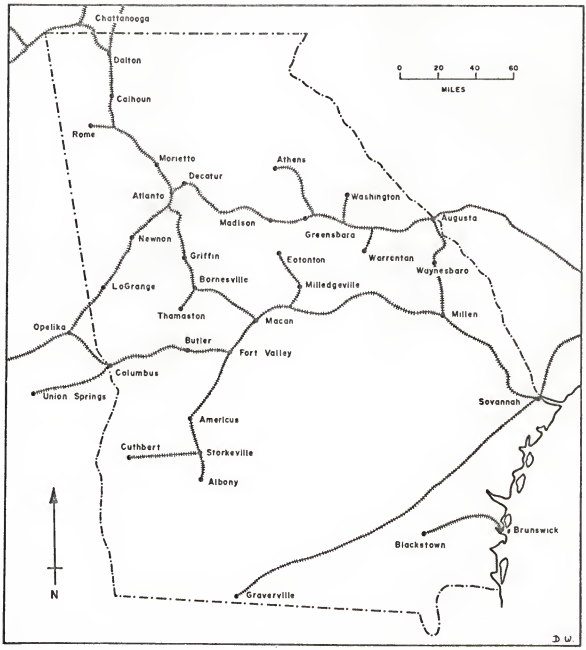
By an act in 1856 the conflict was resolved by the state, which chartered the Albany and Gulf Railroad to construct a line west from a point of intersection of the two roads. The state subscribed $1,000,000 of a capitalization of $2,200,000, and most of the remainder was taken by the city governments of Thomasville and Savannah. By 1865 the line had been completed west to the little town of Boston in south Georgia. Efforts to secure state aid for a number of other railroads were defeated in the Georgia legislature and the state's financial contribution to railroad development was confined almost exclusively to the two-trunk line projects. Brunswick, for example, also had ambitions for a share of the trade of

central Georgia, and in the middle and late 1850's promoted a railroad to Macon. The Central of Georgia, standing in strong opposition, discouraged private investment, while the state remained passive. As a result the company was barely able to begin construction before the war. (Phillips, 1908, 293).

Georgia, until after the Civil War, was opposed to a general system of aid to internal improvements (Cleveland and Powell, 1909, 214). The total state investment in the railroad expansion to 1865 was only about $7,000,000. Local government investment, mainly by stock subscriptions, amounted to some $5,750,000. In this the cities played a much bigger part than the counties. Savannah's share was nearly $2,750,000. The total private investment fell just short of equaling the public share (Heath, 1954, 368-374). By these means ante-bellum Georgia, which had little success with its earlier waterway improvements, secured a network of 1,200 miles of railroad before the Civil War (Fig. 13). Georgia's mileage was roughly equal to that of Virginia, which had committed well over twice as much public money, and considerably greater than that of South Carolina, which had spent more public funds and made a larger private investment. Georgia had also, by concentrating public funds, secured the first penetration of the Appalachians by railroad from the Atlantic coast.

By 1861 railroad lines fanned out into the Back Country from all the principal ports of Georgia and the

Figure 13. The railroad network of Georgia in 1860. (derived from Map, Anon., 1875).


Chattanooga
Dalton
Calhoun
Rome
Marietta
Athens
Decatur
Atlanta
Washington
Madison
Augusta
Greensboro
Newnan
Griffin
Eatonton
Warrentan
Waynesboro
LaGrange
Bornesville
Milledgeville
Thamaston
Macon
Millen
Opelika
Butler
Fort Valley
Columbus
Union Springs
Savannah
Americus
Cuthbert
Storkeville
Albony
Brunswick
Blackstown
Gravesville
N
0 20 40 60
MILES

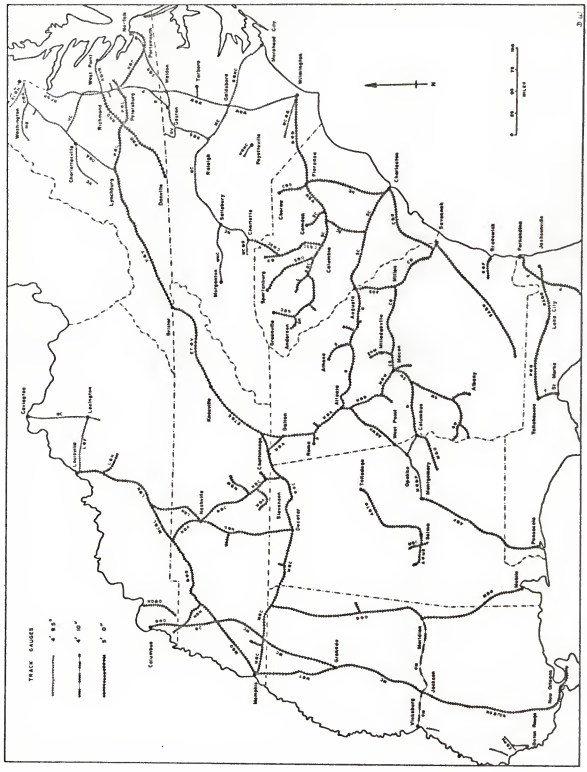
Carolinas, a pattern determined by commercial considerations in association with the difficulty of bridging arms of the sea and the broad estuaries of the rivers (Fig. 14). North-south transportation over large distances continued to depend either on roads or on coastal shipping. Interconnections among the intrastate-oriented railroad systems were on the whole so inadequate that interstate rail traffic had to move by indirect and roundabout routes.

Discontinuities in the System

Commercial interests in the leading ports had strongly influenced the early pattern by constructing feeder lines and striving to gain penetration routes to the far interior. By 1861, however, only two state systems on the south Atlantic seaboard had pushed through connections to the west of the Appalachians. One route led west across Virginia and through Knoxville, Tennessee. The other ran northwest from Charleston and Savannah through Atlanta. These lines converged at Chattanooga, where the Memphis and Charleston provided a through route to Memphis, Tennessee, and afforded connections with a number of other railroads to the north and southwest.

Most of the gaps in the railroad network were due to its infancy and were slowly being filled, but several of the breaks resulted from commercial rivalries. The failure to connect Florida and Georgia by rail before the Civil

Figure 14. The railroads of the South in 1861 (adapted from "United States and Canadian Railways, April 1, 1861. Part III: Southern States," at end of Taylor and Neu, 1956).


TRACK GAUGES
4' 8½"
5' 0"
5' 6"
Washington
Richmond
Petersburg
Norfolk
Portsmouth
Weldon
Tarboro
Goldsboro
Wilmington
Charleston
Florence
Columbia
Camden
Augusta
Atlanta
Macon
Savannah
Jacksonville
Tallahassee
St. Marks
Pensacola
Montgomery
Selma
Meridian
Jackson
Vicksburg
New Orleans
Mobile
Chattanooga
Nashville
Decatur
Memphis
Louisville
Cincinnati
Lexington
Evansville
Indianapolis
Terre Haute
Springfield
Alton
St. Louis
Cairo
Columbus
Bowling Green
Paducah
Evansville
Indianapolis
Terre Haute
Springfield
Alton
St. Louis
Cairo
Columbus
Bowling Green
Paducah
Cincinnati
Lexington
Louisville
Nashville
Decatur
Memphis
Chattanooga
Selma
Meridian
Jackson
Vicksburg
New Orleans
Mobile
Montgomery
Tallahassee
St. Marks
Pensacola
Jacksonville
Florence
Columbia
Camden
Augusta
Atlanta
Macon
Savannah
Charleston
Wilmington
Goldsboro
Tarboro
Weldon
Portsmouth
Norfolk
Petersburg
Richmond
Washington
N
0 10 20 30 40
miles

War was in part because Florida business interests feared that their trade might be monopolized by Savannah, instead of benefiting Florida ports (Phillips, 1908, 359-361). A through route across the piedmont region of North Carolina to the Northeast was prevented by a gap between Greensboro, North Carolina and Danville, Virginia. The advantages to a line permitting through traffic to Richmond were recognized early in the century by merchants in western North Carolina. Commercial interests in eastern North Carolina, however, especially those at the port cities of New Bern and Wilmington, allied to defeat all attempts to obtain a charter for such a railroad from the North Carolina legislature, until the needs of the Confederacy forced its building. The fear of the eastern North Carolina towns was that trade of the piedmont would be diverted from North Carolina ports to Richmond (Brown, 1926, 198-208).

Gaps were not the only obstacles to through-railroad traffic in Georgia and the Carolinas before the Civil War. Gauge differentials provided a more considerable hindrance (Fig. 14). The first railroad, the Charleston and Hamburg, adopted a 60-inch gauge. This influenced consequent railroad construction throughout most of the South. The 60-inch gauge was adopted exclusively by Georgia, South Carolina, and Tennessee railroads, and it was the dominant gauge in Kentucky, Mississippi, and Alabama. A number of Virginia railroads were standard gauge, as were almost all

those of North Carolina, and some short lines in Kentucky and Mississippi. In the case of the short lines, gauge variations usually reflected differences in judgement and a poor realization of the potential of the railroad as a means of long-distance transportation. Railroads in northern Kentucky and northern Virginia adopted the standard gauge in attempts to foster connections to the north across the Ohio and Potomac Rivers where that gauge prevailed. The gauge pattern in North Carolina was an expression of the economic chauvinism of that state.

The resentment of the citizens of North Carolina -- particularly those of the east -- concerning the flow of North Carolina produce to Charleston, Petersburg, Richmond, and Norfolk, had been an important fact of political life in the state from its beginning. The coming of the railroad seemed to many North Carolina businessmen their first real opportunity to redress the situation. The Raleigh internal improvements convention in 1833 adopted a resolution declaring that the state should use its power "in creating and improving markets within her own limits." (Quoted in Brown, 1927, 18.) Standard gauge was selected for the Wilmington and Weldon despite the five-foot roads already being built in Georgia, South Carolina, and Virginia. After that the state kept strictly to its own gauge.

There was opposition in the state, but the coastal counties, along with Wilmington, New Bern, and Morehead

City, always outvoted it, causing the roads of the state, with only two minor exceptions, to be standard gauge. When the line between Greensboro and Danville was built at Confederate demand during the Civil War, eastern interests prevailed upon the legislature to require that it be standard gauge, despite its connection at Danville with the 60-inch gauge of the Richmond and Danville (Brown, 1926, 214). Military necessity finally forced the legislature of North Carolina to approve changing the gauge to 60 inches, but the act by which this was authorized was careful to provide that the gauge would be changed back to standard width within six months after the close of the war. This act, authorized in 1865, was not implemented (Brown, 1926, 214).

Other obstacles to through traffic, not evident on maps, were also prominent in the Georgia-Carolina railroad network before 1860. These were the gaps between railroads which occurred in a number of prominent cities. When the first railroads were built, they were regarded primarily as avenues for trade between a port city and its hinterland. As a result they ran to and not through the port cities. Because of noise and fire hazards, terminals were normally kept to the edges of cities, allowing no connection with other rail lines to the city or to the docks for direct transfer of goods to ships. By the 1850's, with the invention of spark arresters, lines were allowed to enter downtown areas, but not to make the physical

connections which would permit interchange of rolling stock or facilitate the transfer of freight from one line to another.

Restrictions were maintained by local commercial groups who either had a vested interest in the transfer business or who wished to increase the trade of their own ports over those of competitors. The tracks of the Central of Georgia, the Savannah Albany and Gulf, and the Charleston and Savannah Railroads had separate terminals and no physical connection in Savannah (Harden, 1913, 489). Not until 1850 did Macon give its consent for the Central, the Southwestern, and the Macon and Western to make a junction of their tracks (Phillips, 1908, 294). Only after prolonged opposition was the South Carolina Railroad Company granted the privilege of building a bridge over the Savannah and making a connection with the Georgia Railroad (Jones and Dutcher, 1890, 491; Phillips, 1908, 221-252). Local commercial interests prevented the Augusta and Savannah line from forming a junction with other railroads entering the city (Jones and Dutcher, 1890, 504). The Ashley River separated the tracks of the Charleston and Savannah Railroad at Charleston from those of the other two railroads running into the city. At Wilmington the Cape Fear River, as well as gauge differences, blocked through-rail movements. Gauge differences separated the Charlotte and South Carolina from the Wilmington Charlotte and Rutherfordton, and the North Carolina, at Charlotte.

Only inland, and usually away from waterways, were there from the beginning genuine junction points such as those at Atlanta, Columbia, Florence, Raleigh, and Goldsboro.

Figure 14 shows a long standard-gauge route leading north from Wilmington, North Carolina, to the Potomac River, via Petersburg and Richmond. In both those cities, local interests prevented the union of railroads. Their position was supported by an act of the Virginia legislature which permitted cities to forbid railroad companies to use their streets. Four railroads entered Petersburg from south of the Appomatox River (Taylor and Neu, 1956, 46-47). None of these made connections with each other, and even more importantly, they were all separated by the river from the Richmond and Petersburg Railroad which terminated at Pocahontas opposite Petersburg. Although the railroads wanted the gaps closed from the beginning, only the demands of the Confederate government overcame the

> great repugnance . . . felt by the citizens of Petersburg to any connection between the roads in question by means of which produce and merchandise would pass through Petersburg to and from Richmond (Quoted in Taylor and Neu, 1956, 47).

The situation at Richmond was closely parallel. None of the three railroads entering Richmond north of the James River made connections with each other or with the three railroads entering from the south, despite the fact that all but the Richmond and Danville were standard gauge. The local opposition to through connections was so

bitter in Richmond that, when connections were forced by the Confederate government, they were allowed with the provision that such links should be used for military purposes only. All of these discontinuities scattered throughout and around the Georgia-Carolina rail network before 1865 indicate that it should be considered an amalgam of short lines rather than a regionally integrated trunk-line system.

Conclusion: The Civil War Interlude

There were four major long-distance rail routes affecting Georgia and the Carolinas by 1861 (Fig. 14). These were: 1) Charleston to Memphis via Augusta, Atlanta, and Chattanooga (755 miles), opened in 1857, 2) Alexandria to Mobile via Charlottesville, Lynchburg, Bristol, Knoxville, Atlanta, and Montgomery (1,215 miles), opened in 1861, 3) Louisville to Charleston via Nashville, Chattanooga, Atlanta, and Augusta (782 miles), opened in 1859, and 4) a seaboard route from the Potomac to Cedar Keys, Florida via Richmond, Weldon, Florence, Charleston, Savannah, Waycross, and Jacksonville (978 miles), complete except for a short gap in South Georgia by 1861. These routes were circuitous, however, and involved repeated transfers from one line to another. Long-distance through lines were not developed until economic circumstances changed after the Civil War.

The war of 1861-1865 created a sort of artificial interlude in the transport expansion process. With the exception of some minor construction of particular military significance, such as the Piedmont Railroad (Brown, 1926, 202-211), virtually all railroad investment came to a halt during the conflict between the states. At the same time, as a result of the tactics of both of the opposing armies, most railroads in Georgia and the Carolinas suffered severe depredations during the four-year period.

The war uncovered vital weaknesses in the transport system of the Southeast by throwing upon its railroads unusually heavy burdens in the transportation of men and supplies. It soon became apparent that Georgia and the Carolinas lacked, as did the rest of the Confederacy, the materials and skilled mechanics for keeping them in repair (Ramsdell, 1917, 803-805). The result was a series of disasters that brought the railroad systems of all three states to the verge of ruin. According to McGuire:

> Four years without adequate repairs would have wrought havoc with the best roadbeds of the period, even in the North, but in the South deterioration was especially rapid because of its torrential rains and the absence of hard frosts which tend to check decay. Heavier and more frequent trains soon wore out the light iron rails, which had sufficed for the demands of peace; spread and broken rails became increasingly common, and consequent accidents spelled ruin for rolling stock and locomotives, which could only be replaced at almost prohibitive cost. Many cars were lost for the lack of minor repairs, and the speed of trains had to be reduced to

> avoid breakdowns and serious delays en route.
>
> Wear and tear, however, were not the only, or even the worst agencies of destruction. The Civil War was the first great conflict in which railroads played a part and those of the South became at once the prey of the contending armies. The Confederates naturally had less incentive for actual destruction; but they commandeered the rolling stock at will, and frequently carried off rails and ties for use on other roads which they deemed more important (McGuire, 1932, 182-183).

The roads along the line of Sherman's march through Georgia were the worst sufferers. At the close of the war they were in "tatters for miles" (Fish, 1919, 5). The Western and Atlantic, for example, was relieved of much of its rolling stock on the eve of the battle of Shiloh by the Confederate government. The Union forces burned engines and bridges, carried away 14 miles of iron with crossties, and did other damage. When the line was returned to the state of Georgia in 1865, it was almost destitute of rolling stock, machine shops, materials for repairs, and even fuel.

Other roads entering Atlanta also suffered. Early in 1864 Hood's army tore up in several places the tracks of the Georgia, the Macon and Western, and the West Point Railroads. In the latter part of 1864 the Georgia Railroad's facilities at Atlanta and the railroad's depots from Atlanta to the Oconee River were destroyed partly by the Federal army and partly by the Confederate forces (Black, 1947, 531). The Central of Georgia was the last

of the major Georgia roads to feel the ferocity of Sherman, but when returned to its owners in 1865 it was almost completely destroyed. Referring to the work of his army between Atlanta and Savannah, Sherman wrote,

> The bridges and trestles were burned, the masonry of the culverts blown up. In the destruction of the iron rails, mechanical skill vied with native ingenuity in doing the most effective work. About 265 miles of railroad were . . . destroyed (Quoted in McGuire, 1932, 186).

Sherman's forces also tore up 36 miles of track on the Savannah Albany and Gulf, but the remaining roads in Georgia suffered chiefly at the hands of the Confederates. The Southwestern reported that iron from its Fort Gaines branch had been sent to the Central and other roads by the Confederate army, that the bridge across the Flint had been burned by that army, and that the company had lost 49 cars in Confederate service (Black, 1947, 533). After the capture of Port Royal, the Confederates took up the entire track of the Brunswick and Florida -- 65 miles -- and distributed the iron among several roads. Twenty-eight miles of it was later placed on a branch of the Atlantic and Gulf from Lawtons, Georgia, to Live Oak, Florida, to enable the Confederacy to secure beef from Florida. The Macon and Augusta also lost heavily. It was then under construction and had 50 miles of new iron rail ready to lay down. This was taken by the Confederate authorities and used on ironclads (McGuire, 1932, 187). There were similar occurrences in North and South Carolina.

Physical losses, however, were not the only ones sustained by Georgia-Carolina railroads during the war. Nearly all of them lost money in the service of the Confederacy by accepting Confederate notes and bonds as payment for the use of their facilities. The Georgia Railroad for example held, in 1866, Confederate notes and bonds to the amount of $1,117,471 and also bonds and treasury notes of the State of Georgia amounting to $345,587. It had, moreover, an unpaid freight account against the Confederate government for $674,245, making a grand total of $2,137,303 (McGuire, 1932, 187). Such assets were, in the circumstances of 1865, a complete loss, and most Georgia-Carolina railroads entered the post-war period, not only with their lines in poor repair, but with credit very badly strained.

CHAPTER 5

THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS IN DETAIL, PART 4, 1865-1900

Introduction

The railroads of Georgia and the Carolinas, like most Southeastern railroads, were a shambles at the end of the Civil War. The demands and depredations of both armies had completely destroyed or crippled well over half of the Confederate railroads. According to Stover, "Twisted rails, burned ties, destroyed bridges, gutted depots and shops, and lost or dilapidated rolling stock were the normal heritage of war for most southern lines." (Stover, 1961, 61.) As a result some railroads were out of service for a long time. Operation of the 104-mile Charleston and Savannah was not resumed until 1870. Rehabilitation was aided by the Federal government though, and by Christmas 1865 most Southeastern lines, ruined though they were, were offering some sort of service (Coulter, 1947, 234).

The operators controlling these lines in the immediate postwar period were almost universally the

interests which had controlled them before the war. They were, for the most part, the financial and commercial powers in the territory drained by the roads, especially in the key terminal cities. The economic horizons of these decision-makers rarely extended beyond their city or port, resulting in a provincial attitude toward railroad function. They conceived it primarily as their most potent weapon in the growing commercial rivalry between leading ports and interior distributing centers. In formulating policy they sought to achieve three basic goals: long-term investment profit, localization of traffic at the principal terminus, and development of the economic resources of the area tributary to the road.

From this localized perspective emerged an operating strategy that guided railway policy in Georgia and the Carolinas before and immediately after the Civil War. According to this idea the railroad existed to service its key terminus and the area tributary to it. The welfare of city, territory, and company alike required that all three realize their mutually dependent relationship and the need to foster it. Basic to this idea was the principle of one railroad for one region or territory.

The description by Julius Grodinsky of this territorial concept as it operated in the West is equally applicable to the Georgia-Carolina situation:

> To serve a territory with no railroad was the ambition of every railroad operator. . . . An exclusively controlled local territory was a

> valuable asset, as long as it lasted. A monopoly of this kind was perhaps the most important strategic advantage of a railroad, provided of course, the monopolized area either originated valuable traffic or served as a market for goods produced in other areas. Territory thus controlled, was looked upon as "natural territory." It belonged to the road that first reached the area. The construction of a line by a competitor was an "invasion." Such a construction, even by a business friend of the possessing road, was considered an unfriendly act. The former business friend became an enemy (Grodinsky, 1962, 104-105).

In the ante-bellum period spatial and economic conditions in Georgia and the Carolinas favored the territorial concept. Competition was scarce because through traffic for the most part was lacking. The predominance of local traffic and freight rates sheltered from competition allowed many roads to achieve financial stability. The policy of stressing long-term goals by protecting the territory and constructing short feeder lines into untapped areas paid good dividends. Some of the construction of the 1850's posed a threat to the territorial concept but none was serious enough to really challenge the validity of the strategy. The impact of the defeat of the Confederacy, however, caused a sudden displacement of the ante-bellum economic environment. The cost of rehabilitation disrupted traditional ante-bellum railroad policies by burdening the companies with debt. To remove this financial load, the railroads needed more traffic at higher rates, but both were difficult to obtain in the three impoverished states. For most companies the only

feasible alternative lay in securing more through traffic on their roads to supplement local income. The search for this traffic constituted the most significant factor in railroad development in Georgia and the Carolinas from the Civil War to the end of the nineteenth century.

After 1865 three main tactics were adopted to increase traffic: cooperation, construction, and consolidation. Their use depended upon individual circumstances, but most companies became involved at some time with all three. The employment of any of them involved a number of problems. Cooperation demanded for its success a high level of coordination between associated lines, coordination which was often difficult to obtain among companies which had traditionally been fiercely independent. Increased construction to expand trade territories incurred heavy debts and brought distant and once-neutral roads into severe competition for traffic of unpredictable volume at cut-throat rates.

A direct result of this competition was the financial failure of many companies, which were then purchased cheaply by their competitors or by northern capital, which was more readily available. Most particularly there was a rapid expansion and consolidation of corporations in the 1880's and 1890's, which produced a few large integrated railroad systems controlling massive trade territories. These systems evolved, not from coherent economic and geographic planning, but through a process of

piecemeal expansion based upon monetary needs and the potential profits of monopoly. The traditional interests of the regional ports and cities, which began this movement, were submerged by the interests of corporations based outside the area. The prewar traffic flow patterns of Georgia and the Carolinas were transformed to better serve the profit purposes of these corporations.

To understand how this reorientation was achieved, it is necessary to trace the evolution of the railroad network in greater detail. Because of the changed political climates of the states and the greater availability of outside capital after 1865, the influence of state governments on the pattern of transport expansion was considerably reduced. Also the various company associations and consolidations after 1870 quickly bridged state lines and developed interstate routes. Consequently it makes little sense to consider transport development details in the latter part of the nineteenth century in a state-by-state context as seemed appropriate in the earlier periods. Rather it seems advisable to trace the evolution of the individual interstate systems which gave the Georgia-Carolina railroad network its most significant characteristics in 1900. These systems were controlled by four main companies -- the Southern Railway, the Central of Georgia, the Seaboard Air Line, and the Atlantic Coast Line.

The Southern Railway

The Southern Railway was formed basically from the Richmond and Danville, and the East Tennessee Virginia and Georgia Companies. The first, with its subsidiary lines, stretched from Washington, D.C., and Richmond in the north, to Atlanta, Georgia, and Greenville, Mississippi, on the south and west. The second reached from Bristol, Tennessee, in a huge curve to the ocean at Brunswick, Georgia, and, by means of the Mobile and Birmingham, to the Gulf at Mobile, Alabama.

The Richmond and Danville was opened in 1856 between Richmond and Danville, Virginia. It was sponsored by the city of Richmond, which sought the trade of western Virginia, and was aided by the state of Virginia, which owned three-fifths of the stock in 1867. In 1871 all of these state shares were purchased by the Pennsylvania Railroad, which was pursuing a policy of southward expansion, with an aim of opening direct rail communication from the major Northern cities to the heart of North and South Carolina and Georgia (Stover, 1955, 233-235). Under the direction of the Pennsylvania, which wished to secure southern traffic for its own lines, the Richmond and Danville was pushed steadily south after the war.

To obtain a 90-mile extension from Greensboro to Charlotte, the company leased all of the North Carolina Railroad's 223 miles. To get to Atlanta, it allied itself

with the Atlanta and Richmond Air Line, projected to construct a line between Atlanta and Charlotte. In 1878 it bought a controlling interest in the Charlotte Columbia and Augusta Railroad, and secured entrance to the latter city (Stover, 1955, 235). The Pennsylvania aided the enterprise by advances from time to time, and when liabilities became unmanageable subscribed $1,000,000 of a new refunding mortgage (Stover, 1955, 107).

Meanwhile, the East Tennessee Virginia and Georgia Railroad had been established to the west of the Richmond and Danville. The company was a consolidation, in 1869, of the East Tennessee from Bristol to Knoxville, Tennessee, opened in 1855, and the East Tennessee and Georgia Railroad from Knoxville to Dalton, Georgia, opened in 1856. Both roads were aided in construction by the state of Tennessee (Folmsbee, 1939, 235-236). Shortly after the war the roads began to operate as a unit and were formally amalgamated in 1869, after the state had sold its interest. Almost immediately, in 1871, the Pennsylvania, which was becoming dominant in the east, gained control of the Dalton-Bristol line (Stover, 1955, 114-116).

To facilitate this control, and to unify the various interests of the Pennsylvania south of Washington, the Southern Railway Security Company was formed. This company held a majority of the stock of the Richmond and Danville and of the East Tennessee. It also controlled the Coast Line railroads from Richmond to Charleston (see be-

low), and the Memphis and Charleston from Chattanooga to Memphis. The financial results of this combination, however, were disappointing, and in 1873 the company decided to divest itself of unprofitable properties. In 1874 the lease of the Memphis and Charleston was surrendered, and in 1876 the bulk of securities held outside the Richmond and Danville stock were disposed of (Stover, 1955, 117-121).

The breakup of the Southern Railway Security Company marked the beginning of the withdrawal of the Pennsylvania (though not of other northern interests) from investment in the South. It left the lines of the Carolinas and Georgia in four main competing groups. There were the coast roads south from Richmond; the Richmond and Danville combination; the East Tennessee Virginia and Georgia properties; and the Central of Georgia and its associated lines. Three of them took vigorous defense measures, but the policy of the East Tennessee was agressive. Shut up in the narrow valley between the Clinch and the Great Smoky Mountains, and flanked by hostile roads, it desperately needed outside connections.

Accordingly, in 1877, it leased the Memphis and Charleston and obtained an outlet to the Mississippi River. In 1878 it bought the Georgia Southern and the Selma Rome and Dalton, providing itself access via the Alabama River to the Gulf Coast. In 1881 it bought the Alabama Central extending 100 miles west from Selma. The

same year it secured control of the Macon and Brunswick, in Georgia, and began construction of a line from Macon to Rome. The latter was an attempt to circumvent the Western and Atlantic and complete a through line from Tennessee to the South Atlantic Coast. In the north it made an alliance with the Norfolk and Western which opened that company's line from Bristol to Norfolk for through traffic from Tennessee. It also arranged with the Louisville and Nashville and the Kentucky Central for construction to a connection at the Tennessee-Kentucky state line which would open up the business of the Midwest directly to Alabama and Georgia (Klein, 1970, 65-73, 115-145).

The Richmond and Danville, like its rival, also enlarged its system. It leased the Atlanta and Charlotte Air Line in 1881 with certain minor roads in the Carolinas and Georgia. In 1882, under an earlier granted charter to the Georgia Pacific Railroad, it began construction westward from Atlanta to the Mississippi. It did not attain such a geographic spread as the East Tennessee, but it did secure tight and complete control of the territory between Richmond in the north and Augusta, Savannah, and Atlanta in the south. Because the Richmond and Danville was not legally entitled to hold stock in any but connecting lines, its owners originated in 1881 the Richmond and West Point Terminal Railway and Warehousing Company. This company had authority to acquire stocks and

bonds of railroad companies in North Carolina, South Carolina, Tennessee, Kentucky, Georgia, Alabama, Mississippi, and other states.

By 1883 a new consolidation had taken place, through stock purchases and exchanges, which reunited most of the lines dominated by the former Southern Railway Security Company. Return to the old combination was made desirable by the more intimate physical connection of the two groups of roads. The Western North Carolina had been opened across the mountains of North Carolina in 1882. This had made practicable the diversion of the western traffic of the East Tennessee Virginia and Georgia, from the Norfolk and Western to the Richmond and Danville -- a traffic which the northern connections of the East Tennessee promised to increase. It also relieved the East Tennessee's shortage of capital, caused by the improvement of the local lines purchased in the preceding decade. Between 1883 and 1887 there were a number of financial manipulations by major stockholders which caused the structure of the combination to change several times. It emerged eventually in its 1883-form, except for the important loss of the Coast Line railroads (Klein, 1970, 86-114).

In 1889 the Richmond Terminal took another important territorial step of consequence by acquiring the Central of Georgia Railroad. The Central at this time owned the most considerable of the lines in Georgia and eastern Alabama. It stretched from Savannah and Port Royal on the

south, to Spartanburg and Atlanta on the north, to Birmingham, Montgomery, and Albany on the west, and to Columbia in the east. This railroad property was considered desirable since it freed the East Tennessee from one of its largest competitors. From a traffic point of view, however, the advantages of consolidation were not so fruitful. The local business of the Central was not significantly increased by the merger, and through business showed signs of decrease. The Central lines ran generally east and west. Their main interest was to carry freight from Georgia, Alabama, and the Midwest to Savannah for forwarding to the north by way of the Ocean Steamship Company, which they controlled and from which they gained in 1889 one-fifth of their total earnings. The Richmond Terminal's interest, in direct contrast, was to send this same traffic north by land in order to secure a long haul for its own railroads (Klein, 1970, 177-184).

With the Cental of Georgia, the Richmond and Danville, and the East Tennessee under its control, the Richmond Terminal looked to still further expansion. In 1890 it acquired control of the Erlanger group of railroads which ran from Cincinnati in the north via Chattanooga to Vicksburg, Mississippi, and Shreveport, Louisiana. At the same time it took in the Louisville Southern which joined Louisville with the Cincinnati lines. In 1888 the Richmond Terminal concluded a close alliance with the Atlantic Coast Line and arrangements were made for terminal facil-

ities at the port of Norfolk. In 1889 it leased the Georgia Pacific, and two years later, when that road reached Arkansas City, Arkansas, the Richmond Terminal made a through-traffic agreement with the Missouri-Pacific.

In 1890 the Richmond Terminal was a massive network touching ten states. It was composed of six major trunk lines, three of which ran basically north-south and three east-west (Klein, 1970, Map, 214-215). They were 1) from Cincinnati via Knoxville, Rome, Atlanta, and Macon to Brunswick or Savannah, 2) from Bristol via Knoxville, Rome, and Selma to Mobile, 3) from Washington via Lynchburg, Charlotte, Atlanta, and Montgomery to Mobile, 4) from Memphis via Chattanooga and Knoxville to Bristol, 5) from Arkansas City via Birmingham, Atlanta, and Augusta to Port Royal and, 6) from Meridian via Montgomery, Americus, and Macon to Savannah. It was the largest system in the Southeast at the time and dominated the local traffic of the territory east of Alabama, south of Kentucky and Tennessee, and north of Florida.

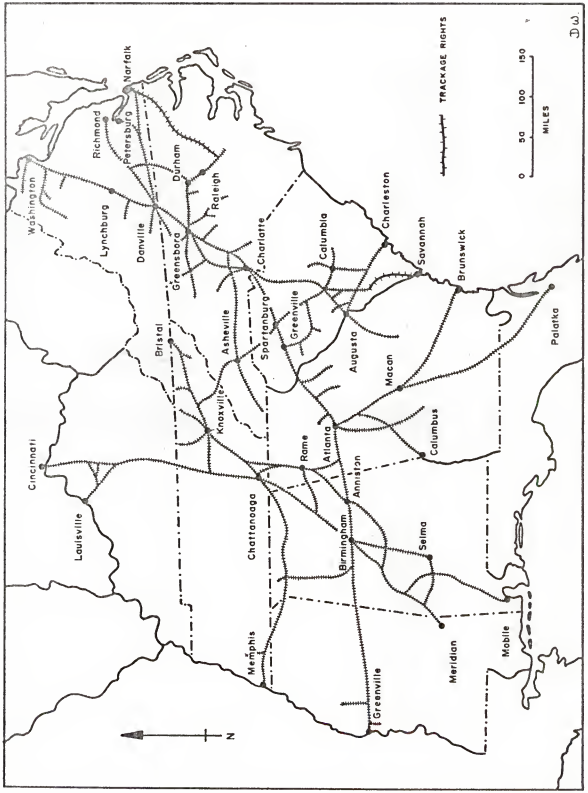
Despite or perhaps because of its size, the Terminal in 1890 was also extremely vulnerable. Its physical condition was poor and much of its mileage, mostly secondary lines, was unprofitable. In 1891 financial pressures forced the company into reorganization (Daggett, 1908, 169). In 1894 the Southern Railway was organized with a charter from the state of Virginia. It took over, as successor to the Richmond Terminal properties, a system

with a spatial extent of 4,607 miles. Some 30 separate corporations were swept away because the Southern was an operating company which, unlike the Richmond and Danville, controlled only a very small fraction of its mileage through the ownership of stock.

During the reorganization, opportunity was taken to rationalize the system and to rid it of many less useful and profitable lines. Other lines were lost because the Southern was financially unable to retain them. Some of these were retrieved in later years. Control of the Alabama Great Southern was bought in 1895; the Memphis and Charleston was acquired in 1898; the Richmond and Mecklenburg was leased in 1898; the Mobile and Birmingham in 1899; and the Northeastern of Georgia in 1899 (Klein, 1970, 283). By the end of the century, however, the system had not regained its former extent.

The most important territorial loss was the Central of Georgia, which was reorganized as the independent Central of Georgia Railway in 1895 (see below). On the other hand, in 1900 the Southern was a much more viable network. Not only was it geographically more streamlined, lacking the earlier duplication of routes and superfluity of feeders, but it had grown to tap new areas and provide longer hauls. In 1900 the Southern had a system of 7,717 miles, an increase of 3,110 miles in less than six years (Klein, 1970, 283). It ran south to Jacksonville and Palatka in Florida, east by direct connections to

Figure 15. The Southern Railway system in 1900 (adapted from Doster, 1957, Map VI).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Bristol
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Spartanburg
Greenville
Rome
Atlanta
Anniston
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Selma
Greenville
Meridian
Mobile
Columbus
Macon
Augusta
Columbia
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Charleston and Norfolk, and west from Louisville to East St. Louis, giving the system access to the heart of the Midwest (Fig. 15).

The Central of Georgia

During the ante-bellum period the Central of Georgia was one of the strongest and most prosperous roads in the Southeast. During the war it suffered in the same ways as other roads. In 1864 Sherman's advancing army left much of the Central's main line in total ruin. The aftermath of the war created significant changes in the Central's traditional position. Though still the most powerful corporation in Georgia, it lost much of its political authority in the Reconstruction legislatures of the state. Specifically it could no longer control the building of new railroads. In spite of extensive lobbying by the Central of Georgia and the Georgia Railroad, the Georgia legislature, in 1866, agreed finally to endorse the bonds of the Macon and Brunswick (McGuire, 1932, 194-195). By 1872 it had endorsed the bonds of six other roads, at least half of which threatened to affect the Central's existing flow of traffic, both local and long haul (McGuire, 1932, 195-205).

The through-traffic situation was particularly threatened. Before the war the Central enjoyed a role as one of the prime rail-water routes from the Southeast to

the Northeast. Eastbound through traffic converging at Chattanooga could either take the all-rail route to the Northeast via the East Tennessee roads, or choose between the rail-water routes over the Western and Atlantic, to Savannah via the Macon and Western and Central of Georgia, or to Charleston via the Georgia and South Carolina Railroads. In the years after the war, however, the increasing importance of through traffic spurred the completion of new lines along both trade axes. These included the Richmond and Danville's line from Atlanta to Richmond; an alternative Atlanta-Richmond route via Augusta, Columbia, and Wilmington; and a route (composed of several companies) from Louisville to Mobile and New Orleans.

Although the Central held large amounts of stock in connecting railroads after 1865, links to the north and west of Macon were insecure. This was particularly the case with the state-owned Western and Atlantic which was subject to the unpredictable whims of Reconstruction politics (Goodrich, 1960, 209-212). To preserve its territorial strength, and to protect the commercial supremacy of Savannah, the Central embarked upon a policy of expansion. Before the war the Central and the Georgia roads had agreed to subscribe equally and jointly to the stock of the Western of Alabama Railroad, to assure the building of a line from Montgomery to Selma, Alabama. In 1868 the Central of Georgia revived this proposition and,

getting no response from the Georgia Railroad and its connections via Charleston, went ahead to endorse the bonds and gain control of the Western of Alabama (Doster, 1964, 9). Two years later the Central gained greater assurance of entrance into Atlanta by leasing the Macon and Western. Control of this road brought with it a majority interest in the Savannah Griffin and North Alabama Railroad, then under construction to Carrollton, Georgia (Klein, 1970, 80).

In 1870, after prolonged negotiation, an agreement was reached with the Georgia Railroad to jointly share the liabilities of the financially troubled but strategically located Montgomery and West Point, and Western of Alabama Railroads. These two lines were then consolidated as the Western Railroad of Alabama. The Western's location made it a valuable feeder for the Georgia, the South Carolina, and the Central -- and all these railroads had been interested in acquiring it. By the agreement, rates from Montgomery and points west were to be the same to Charleston as to Savannah. The Central was to make the rates. Columbus was to be kept in the Savannah orbit. The rate from Charleston was to be the same per mile as the rate from Macon to Savannah. This killed very effectively, in advance, the Macon business of the Macon and Augusta which was to be opened to Macon in June, 1871. In spite of the merger, however, the Western Railroad consistently failed to pay its way (Doster, 1965, 10-11).

At this time the Richmond and Danville reached Georgia by the Charlotte Columbia and Augusta to Augusta, and by the East Tennessee Virginia and Georgia to Dalton. To further its expansion plans, the Richmond and Danville offered the Georgia Railroad an agreement for joint use of the Atlanta and West Point line and the Western of Alabama as part of its through route to the Southwest. It was difficult for the Georgia road to refuse, because the Richmond line could easily by-pass the Georgia by completing the projected Atlanta and Richmond Air Line from Charlotte to Atlanta or by acquiring the Selma Rome and Dalton, and the Alabama Central. It actually did try to gain control of the South Carolina Railroad by attempting to buy its depreciated stock (Doster, 1965, 13).

To check the Richmond and Danville threat, the Central of Georgia also pressured the Georgia by offering to lease the South Carolina Railroad. This offer was declined, but the sandwiched Georgia panicked at the prospect of simultaneously losing control over its chief feeders and its port outlets. In 1872 it took up a previously rejected proposal to build a line from Port Royal, South Carolina, to Augusta (Jones and Dutcher, 1890, 508-510). The directors also toyed with the idea of making a loan to the Savannah, but finally turned this down. Efforts to develop the port of Port Royal by the Georgia in consequent years were fruitless (Doster, 1965, 17).

In a further attempt to head off Northern competition (from the East Tennessee Virginia and Georgia through its subsidiary, the Selma Rome and Dalton), the Central of Georgia pressured the Georgia Railroad to jointly purchase the foreclosed Western Railroad of Alabama. By the agreement the Central controlled the Columbus to Opelika route, the Georgia operated the West Point and Opelika line, and the remaining portion from Opelika to Selma was shared. Possession of the Western Railroad gave the Central an important foothold in Alabama. To supplement it, the Central also acquired the Vicksburg and Brunswick, and the Montgomery and Eufala, as feeder lines, purchased an increased share of the Mobile and Girard, and extended the Southwestern line deeper into southwest Georgia to meet the Central's Alabama roads across the Chattahoochee (Klein, 1970, 80-82).

The expansion activities of the Central were basically defensive and protective. Because of this it staunchly opposed construction of state-supported roads. In 1869 it joined other roads in an unsuccessful injunction to block completion of the Brunswick and Albany. Though the Central could not stop the Macon and Brunswick, it reduced it to a local road by leasing the Macon and Western. Later the Central tried to purchase both the Brunswick and Albany, and the Macon and Brunswick, but its efforts were invalidated under a section of the new state constitution of 1877. This prohibited the legislature

from authorizing any corporation to

> buy shares or stock in any corporation in this state, or elsewhere, or to make any contract or agreement whatever with any corporation which may . . . defeat or lessen competition, or to encourage monopoly (Quoted in Klein, 1970, 82).

In procuring the Montgomery and Eufala (above), the Central was largely concerned to outbid the Louisville and Nashville, which was trying to expand its empire to the Atlantic coast (Stover, 1955, 210-232). In April, 1880, the Louisville and Nashville and the Central of Georgia agreed jointly to lease the Georgia Railroad, thus establishing a through-traffic line from the Ohio River to Savannah, Charleston, and Port Royal (Doster, 1965, 19). At the same time the Georgia Railroad, the Central of Georgia, and the South Carolina Railroad made an agreement with the coastal shipping lines to stabilize rates to the Northeast, and make them competitive with those of the railroads (Kirkland, 1948, Vol. 2, 179-181). The Louisville and Nashville's main competitor in the Midwest, the Nashville Chattanooga and St. Louis, also wanted an outlet to the south Atlantic coast, and in January, 1880, offered to lease the Central of Georgia (Klein, 1970, 85). During the negotiations, however, the Nashville Chattanooga and St. Louis was taken over by the Louisville and Nashville (Tilford, 1951, 15).

The Louisville and Nashville went on to expand at a rapid rate. Among the other acquisitions of 1880 were the

roads from Montgomery to Mobile and from Mobile to New Orleans (Anon., 1926, 99-107). In 1882 the Louisville and Nashville made a determined effort to gain control of the Central of Georgia, but it was thwarted by a coordinated opposition of stockholders in the principal cities touched by the Central (Klein, 1970, 156-161). In 1890 the Nashville Chattanooga and St. Louis (under the Louisville and Nashville) leased the Western and Atlantic, thus dominating access to Atlanta from the north. The following year the Louisville and Nashville purchased the Pensacola and Atlantic, which gave the system access to south Georgia and gained a through route between Jacksonville, Florida, and New Orleans (Kerr, 1933, 45-48).

In order to defend itself against the threats of the Louisville and Nashville in the west, the Central had, in 1880, added the Montgomery and Eufala Railway to its system (above). Later, in 1886, the Central leased the 84-mile Mobile and Girard, another road that connected its Georgia system with Alabama. At about the same time it acquired a group of smaller lines connecting central Georgia with Birmingham, Alabama. These short lines were consolidated in 1888 into the Savannah and Western Railway, a 428-mile road with a stem from Americus, Georgia, to Birmingham. By that time, however, the Central had lost its independence. In 1886 the expanding and prosperous Central attracted the interests of the Richmond Terminal, like the Louisville and Nashville, searching for greater

penetration of the lower South. This holding company acquired complete control of the Central of Georgia in 1888 and, with this shift in control, one of the last of the prosperous regionally managed roads was lost to the Northeast (Klein, 1970, 177-184).

The addition of the Central of Georgia to the Richmond and West Point Terminal Company system was of doubtful value, since the natural interest of the Central was to carry freight to Savannah for water shipment to the Northeast, while the best interest of the Richmond Terminal Company was to secure the long haul for its own lines. In terms of its total mileage, however, the addition of the Central of Georgia was important because it gave the Richmond Terminal Company a network of over 7,000 miles by 1886 (Anon., 1886, 140). The Terminal's control over the Central of Georgia was made more complete in the spring of 1891 when the Georgia Road was leased to the Georgia Pacific Railway, whose property was already under lease to the Richmond and Danville (Stover, 1955, 247-249).

In 1893 the Richmond Terminal over-extended itself and went into receivership. At that time the Central of Georgia was separated from it and reorganized as an independent company, the Central of Georgia Railway. This new organization was somewhat smaller than that existing before 1888, because of the loss of its share of the lease of the Georgia Railroad. It remained indirectly under the control of the Richmond Terminal's successor, the Southern

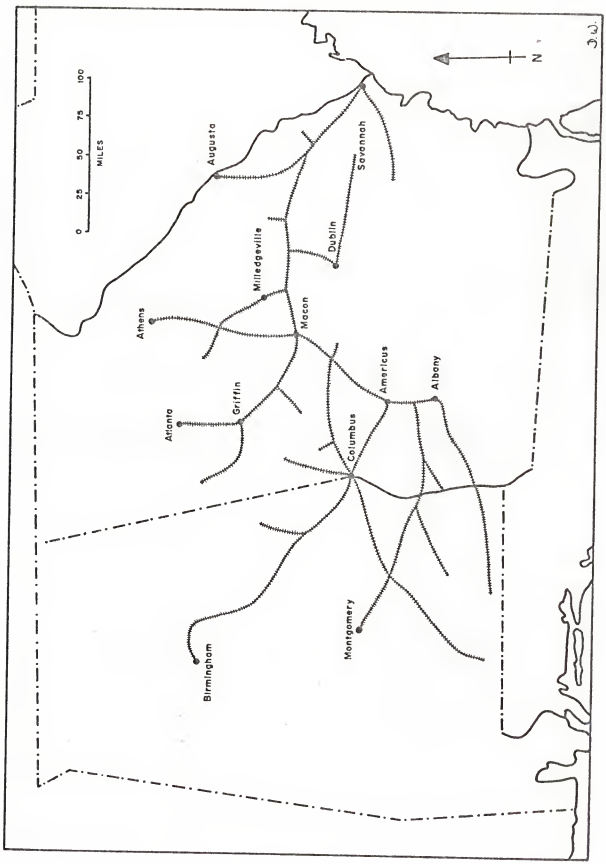
Railway. Under that ownership and up to 1900 the Central of Georgia operated as a separate unit (Stover, 1955, 260-261) (Fig. 16). The Southern disposed of its holdings in the reorganized company in 1907 but reacquired the system in 1963, so that the Central of Georgia at this time (1972) belongs to the Southern Railway system (Klein, 1970, 283).

The Atlantic Coast Line

In 1860 the railroads of Virginia and North Carolina which went into the Atlantic Coast Line, together with the Richmond Fredericksburg and Potomac, formed the main link in a direct north-south land-water line running between Washington, D.C., and Charleston. There were three roads which formed the main line of communication between Wilmington and Richmond, a distance of 245 miles. The three roads -- the Petersburg, the Wilmington and Weldon, and the Richmond and Petersburg -- were all of the same gauge, but there was no physical connection at Petersburg or Weldon. It was, therefore, almost impossible to transfer cars from one road to another. All through passengers and freight had to be transferred by wagon.

The three railroads had not originally been planned to form a through north-south line. The Petersburg was intended to tap North Carolina's Roanoke River country, taking agricultural produce to the Appomattox at Petersburg, where it could be loaded on ship and sailed to Baltimore,

Figure 16. The Central of Georgia Railway system in 1900 (adapted from Doster, 1957, Map IV).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Atlanta
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Albany
Columbus
Montgomery
Birmingham

Philadelphia, and New York. The Wilmington and Raleigh connected the Roanoke country with the Cape Fear River. The main purpose of its builders was to collect the produce of various river valleys which the road crossed and take it to market within the borders of the state of North Carolina (Brown, 1928, 31-40). The Richmond and Petersburg formed primarily a connecting link between the Richmond Fredericksburg and Potomac, and the Petersburg road. Before it had been in operation two years, it had secured three-fourths of the traffic, which had formerly gone via the James and Appomattox Rivers, between the two cities of Richmond and Petersburg (Turner, 1947, 355-363).

Although largely unplanned, it was inevitable that the construction of the 245 miles of road should cause a rearrangement of north and south passenger and freight routes. The first visible effect was in north-south passenger travel. With the completion of the Richmond and Petersburg there was only one long break in the line of railroads between New York and Wilmington -- that from Washington to Acquia Creek on the Potomac. The time in transit over this route (in connection with the line of boats which the Wilmington and Weldon operated between Wilmington and Charleston) was the quickest between the northern cities and Charleston. Competition between the Atlantic lines of railroads and the ocean packet lines immediately developed; the railroads, as long as they acted cooperatively, were able to maintain themselves in

this contest, despite inconveniences to passengers who had to transfer because of gaps between roads.

Before the Civil War the railroads remained relatively independent and were supported basically by local traffic. Almost no freight originating south of Wilmington was carried by rail to New York, Philadelphia, or Baltimore (Dozier, 1920, 84-85). The three lines collected the commodities produced along their lines or grown in that territory which had access to them by short feeder lines, by rivers, or by wagon. The Wilmington and Weldon was a naval stores railroad, and it constructed short spurs branching off the main line and extending into the territory producing tar, pitch, turpentine, and lumber. These articles were collected and marketed chiefly through Wilmington.

Agricultural commodities produced in the northern portion of North Carolina were marketed over the Petersburg. They went to Petersburg and to Richmond, where they were consumed, forwarded to other parts of the state, or shipped to domestic or foreign markets. Besides handling wheat products, which the Wilmington and Raleigh turned over to it, the Petersburg received from the Raleigh and Gaston, over the Greenesville and Roanoke, a considerable amount of produce from the interior of North Carolina. Much of this had formerly gone by wagon overland to Lynchburg. This traffic consisted mostly of cotton, tobacco, and grain.

To secure through traffic in large volume, two developments were necessary: the provision of a through ticket and the filling of gaps in the system. A through fare was agreed to in 1840 (Dozier, 1920, 92-93). Physical connection came much later in 1865-1866, when two companies were chartered by the Virginia legislature. These were 1) the Richmond and Petersburg Connection Company, and 2) the Richmond and Petersburg and Richmond Fredericksburg and Potomac Connection Company (Dozier, 1920, 116-117). Only the latter was completed under its initial charter in 1867. Permission was granted instead to the Petersburg Railroad to extend its line to the Appomattox River, and the Richmond and Petersburg asked to be allowed to extend its tracks to the south side of the Appomattox to connect with the Petersburg at that point. The line was completed in 1867.

At the same time that these connections were being made, a line was being built from Washington to Brooks Station on the Richmond Fredericksburg and Potomac, and a bridge was being constructed over the Cape Fear River at Wilmington (Dozier, 1920, 118-119). This bridge was built by the Wilmington Railway Bridge Company, chartered in 1866. The stock of the company was owned jointly by the Wilmington and Weldon, the Wilmington and Manchester, and the Wilmington Columbia and Rutherford (later part of the Seaboard Air Line). The bridge, with a few miles of road, established the connection of these three companies at

Wilmington. The closing of these gaps made continuous travel between New York and the south Atlantic coast possible and quickly increased traffic.

The real beginnings of the Atlantic Coast Line system came in 1869, when the Wilmington and Weldon persuaded the state to sell its stock in both the Wilmington and Weldon Railroad and the Wilmington and Manchester Railroad (Stover, 1955, 263). Baltimore interests purchased 4,000 shares of Wilmington and Weldon stock to gain control of both lines. Never prosperous after the war, the Wilmington and Manchester was in receivership by 1868. In 1870 it was reorganized by the Baltimore capitalists, who had secured permission to extend their line to Columbia, as the Wilmington Columbia and Augusta Railroad (Dozier, 1920, 128). The Columbia extension was opened in 1872 and gave the company reliable access to the South Carolina piedmont. It was later extended to Augusta. During the 1870's the Wilmington and Weldon, and the Wilmington Columbia and Augusta were included in the Pennsylvania system of southern lines, because their owners were directors of the Southern Railway Security Company.

Even before the Baltimore interests gained control over the two North Carolina roads, the coastal rail route from Richmond south to Charleston had been known as the "Weldon route." In the 1870's the five roads (Richmond and Petersburg; Petersburg; Wilmington and Weldon; Wilmington Columbia and Augusta; Northeastern of South

Carolina) connecting the two cities, collectively adopted the term Atlantic Coast Line to symbolize their cooperation and the orientation of their route (Stover, 1955, 265). In late 1884 the Baltimore syndicate purchased the Petersburg Railroad, the line connecting the Weldon and Petersburg. At the same time they increased their financial influence over other segments of the route such as the Richmond and Petersburg, the Northeastern of South Carolina, and the Cheraw and Darlington. Under their control the Cheraw and Darlington expanded into a small system of roads. It bought the Cheraw and Salisbury Railroad in 1892; the Hartsville Railroad from Hartsville to Floyds, South Carolina, in 1895; and Division A of the Charleston and Northern, from Gibson, North Carolina, to Darlington, South Carolina, in 1895 (Dozier, 1920, 131).

Through service on the Atlantic Coast Line south of Wilmington was improved in the spring of 1886 when the 60-inch gauge south of the city was changed to the narrower standard gauge which had been characteristic of the other roads of the system from their construction. With improvements in both freight and passenger service, the system prospered, especially the Wilmington and Weldon. In 1885 the Wilmington and Weldon leased its connecting road to the south -- the Wilmington Columbia and Augusta (Stover, 1955, 266-267). In the same year the Wilmington and Weldon also undertook the construction of a line called the "Fayetteville Cut-off" from

Contentnea, North Carolina (near Wilson), on the Wilmington and Weldon, to Peedee, South Carolina (near Florence), on the Wilmington Columbia and Augusta. This new line considerably shortened the distance and running time between Petersburg and Charleston and became the main line of the Atlantic Coast Line (Anon., 1933, 11).

The decade of the 1890's brought increased traffic and also increased financial control of the system by Baltimore capital. In 1889 Northern control of the growing system was made complete by the incorporation in Connecticut of the Atlantic Coast Line Company. This holding company soon secured a majority of the stock of many Southeastern roads in the Atlantic Coast Line system (Stover, 1955, 267). Between 1898 and 1902 the Atlantic Coast Line gained the basic pattern and organization which it held until 1966.

The 700-mile Atlantic Coast Line Railroad of South Carolina was organized to include five previously associated roads: the Wilmington Columbia and Augusta; the Northeastern Railroad of South Carolina; the Cheraw and Darlington system; the Manchester and Augusta; and the Florence Railroad (Anon., 1933, 12). In the same year a Virginia act permitted the Richmond and Petersburg Railroad and the Petersburg Railroad to consolidate into the 100-mile Atlantic Coast Line Railroad Company of Virginia. Later Virginia legislation, in 1900, gave this new company a shorter name, the Atlantic Coast Line Railroad Company,

and allowed it to purchase other railroads. In 1899 it leased the Georgia Railroad jointly with the Louisville and Nashville. In April, 1900, the Atlantic Coast Line Railroad purchased the Atlantic Coast Line of South Carolina, the Wilmington and Weldon, and other railroads in the total system. In 1900 the entire system with branches totaled about 2,000 miles.

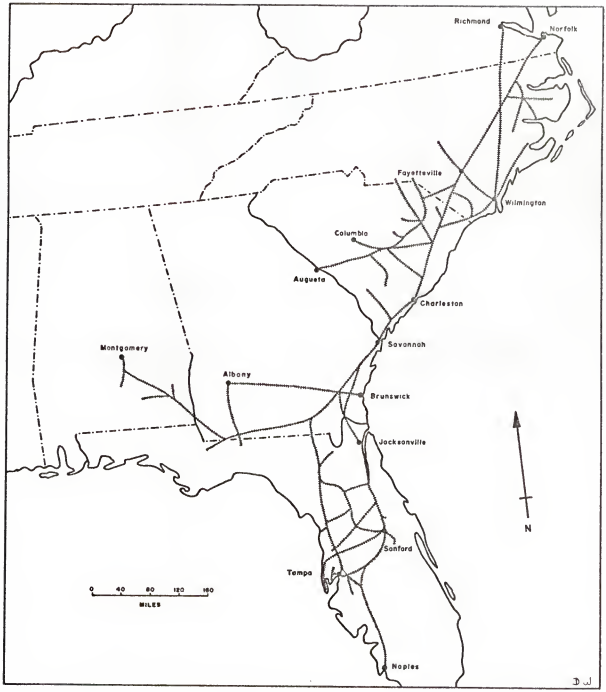
Two years later another major rail network, the Plant system, was added to the Atlantic Coast Line, providing important extensions into Georgia, Florida, and Alabama (Stover, 1955, 268). The Plant system began with the purchase by H. B. Plant of the Atlantic and Gulf, a railroad in receivership in 1879. In 1880 the property was reorganized as the Savannah Florida and Western Railway. A second road in receivership, the Savannah and Charleston, was purchased by Plant in 1880 and reorganized as the Charleston and Savannah Railway. This gave the Plant system a connector to the Atlantic Coast Line at Charleston. In 1882 the Plant Investment Company was formed. This company expanded its railroad holdings using the Savannah Florida and Western as the keystone of the system.

In 1884 the Plant investment company purchased a controlling interest in the Brunswick and Western, which served the southern part of Georgia. In the same year Plant also acquired the South Florida Railroad, a new line that was being constructed from Sanford, Florida, to Tampa. In 1890 the Plant system gained its fifth line by

purchasing a controlling interest in the Alabama Midland, a 200-mile road connecting the western terminal of the Savannah Florida and Western at Bainbridge, Georgia, with Montgomery, Alabama. During the 1890's more roads were acquired in Florida, and a short route was cut between Jacksonville and Jesup, Georgia, to combat the newly constructed road of the Florida Central and Peninsular system between Savannah and Jacksonville. At Plant's death in 1899 the system consisted of 14 railroads totaling 2,100 miles (Stover, 1955, 269-270).

In April, 1902, the Atlantic Coast Line completed negotiations providing for the acquisition of the entire Plant Railroad system, creating a rail empire of about 4,000 miles (Anon., 1933, 13). The network stretched from Virginia in the north, to central Florida and the Gulf on the south, and to Alabama in the west (Fig. 17). It touched all the major cities of the coast and tapped the piedmont at Raleigh, Fayetteville, Cheraw, Columbia, Montgomery, and lesser points. The year it acquired the Plant system, the Atlantic Coast Line also purchased controlling stock in the Louisville and Nashville Railroad (Woodward, 1951, 293). Together with associated roads (the Georgia, 626 miles; the Louisville and Nashville, 4,916 miles; and the Nashville Chattanooga and St. Louis, 942 miles), the Atlantic Coast Line system of 10,071 miles was the eighth largest in the nation in 1902 (Chapman, 1934, 7).

Figure 17. The Atlantic Coast Line and Plant Railroad systems in 1900 (adapted from Stover, 1955, 264).


Richmond
Norfolk
Fayetteville
Wilmington
Columbia
Augusta
Charleston
Savannah
Montgomery
Albany
Brunswick
Jacksonville
Sanford
Tampa
Naples
N
0 40 80 120 160
MILES

The Seaboard Air Line

The Seaboard Air Line developed as the main competitor to the Atlantic Coast Line for the roads of the coastal plain and lower piedmont of Georgia and the Carolinas. The Seaboard Air Line system started shortly after the Civil War, when Northern business interests from Philadelphia and Baltimore gained control of the Seaboard and Roanoke Railroad from Portsmouth, Virginia, to Weldon, North Carolina, and the Raleigh and Gaston connecting Weldon and Raleigh. The lease of the North Carolina Railroad in 1871, by the Richmond and Danville, effectively hemmed in the Raleigh and Gaston (Brown, 1928, 164-173). A traffic agreement between the Raleigh and Gaston and the North Carolina expired in 1873, and its expiration was marked by a falling off in the gross receipts of the Raleigh and Gaston for that year. In anticipation of this outcome of the move by the Richmond and Danville, the directors of the Raleigh and Gaston, in the late fall of 1869, had offered to lease the North Carolina for 20 years, but were unsuccessful. They began to look for an alternative route to the southwest and revived a previously proposed scheme (McGuire, 1934, 102-103).

This project was the Chatham Railroad, which had been chartered in 1861 (to build from Raleigh, to the Chatham coalfields) and abandoned in 1865 after $100,000 in Confederate money had been spent upon it. The Raleigh

and Gaston subscribed heavily to the stock of the railroad and gained control in 1868. The name was changed to the Raleigh and Augusta Air Line, and the road was completed to a junction with the Carolina Central at Hamlet, North Carolina.

The connection was accompanied by a traffic agreement by which the latter was to receive 28 percent of whatever receipts might accrue from traffic between Charlotte and northern points. The Atlanta and Charlotte Air Line had made "fair promises" to cooperate with the management of the Raleigh and Augusta, provided a suitable connection could be made with the Carolina Central -- and it kept its promises. In 1878 the Seaboard Air Line was selling through tickets from Boston and other northern points to Atlanta (McGuire, 1934, 108).

The alliance of the Atlanta and Charlotte hurt the Richmond and Danville, which had long wanted to control that road. It had acquired control of the Charlotte Columbia and Augusta in 1878, and had tried unsuccessfully to prevent the Carolina Central from making depot connections with the roads running southward from Charlotte. In March, 1881, it leased the Atlanta and Charlotte for 99 years, and shortly afterward it was rumored that the Wilmington and Weldon, the Carolina Central, the Chester and Lenoir (connecting with the Carolina Central at Lincolnton), and the Cheraw and Chester had passed under its control. There were also rumors that the Atlantic

Coast Line had purchased the Greenville and Columbia as an extension of the Wilmington Columbia and Augusta (McGuire, 1934, 108-109). The Richmond and Danville's moves inspired the Seaboard to protect its southwestern connections by acquiring a controlling interest in the Carolina Central. This company had taken over the Wilmington Charlotte and Rutherfordton and had built 87 additional miles of railroad to provide a through line of 241 miles from Wilmington to Shelby, North Carolina, at the foot hills of the Blue Ridge Mountains (Stedman, 1884, 56-78; Smith, 1952, 18).

There was no further progress of the Seaboard for nearly a decade, although a number of feeders were added to the line. The most important was the Durham and Northern, built with the aid of the Raleigh and Gaston, which became an ostensibly independent member of the system (Boyd, 1925, 136-148). The rivals of the Seaboard, however, remained active. The Wilmington and Weldon leased the Wilmington Columbia and Augusta in 1885. The East Tennessee Virginia and Georgia, in 1881, purchased the Macon and Brunswick and also the Cincinnati and Georgia. The latter had been chartered in the same year to circumvent the Atlantic and Western, by building from Macon to a connection with the Tennessee Road at Rome, Georgia. In 1888 the East Tennessee Virginia and Georgia itself passed under the control of the Richmond Terminal, which had acquired control of the Richmond and Danville in

1886. The Georgia Railroad, which might have formed a valuable connection for the Seaboard at Augusta, was leased in 1881 by the Central of Georgia and the Louisville and Nashville.

Threatened with the prospect of being completely "bottled up" by its ambitious rivals, the Seaboard once more drove southward, but this time its objective was Atlanta, the emerging hub of the Georgia-Carolina communications network. In 1886 the Georgia Carolina and Northern Railroad was chartered in the states of Georgia and North and South Carolina. It was to run from Monroe, on the line of the Carolina Central, to Atlanta. The first section -- Monroe to Chester, South Carolina -- was opened in 1888, and in 1892 the road entered Atlanta from Athens (McGuire, 1934, 111-172).

By 1893 the entire system of five roads was known as the Seaboard Air Line and furnished through service from tidewater at Portsmouth and Norfolk, Virginia, to Atlanta, and from Wilmington to Rutherfordton (Smith, 1952, 19). In 1898 other Baltimore interests who already owned the 459-mile Georgia and Alabama Railway purchased a controlling interest in the Seaboard Air Line System. The Georgia and Alabama had been organized in 1895 as a successor to the Savannah Americus and Montgomery Railway, a line built and completed just prior to the panic of 1893. The main line of the Georgia and Alabama ran from Savannah to Montgomery and thus gave the Seaboard new connections to the west (Stover, 1955, 272).

Two months later the Seaboard added another important system when it purchased a majority of the shares of the 940-mile Florida Central and Peninsular Railroad. One of the most strategically located branches of the line was the South Bound Railroad opened in 1892 from Savannah to Columbia, South Carolina (Harden, 1913, 489). Two other short connecting lines were added to the system to give a new through route from Richmond south to Florida. At the northern end of the route the newly constructed 102-mile Richmond Petersburg and Carolina improved the service between Richmond and Raleigh. In South Carolina a 55-mile link between Columbia and Cheraw completed the direct route to the south.

In October, 1899, the Seaboard Air Line concluded negotiations with the Richmond Fredericksburg and Potomac Railroad and the Pennsylvania Railroad to acquire trackage rights to Washington, D.C., and New York City. The final step came in April, 1900, when the Baltimore and Richmond financiers organized a new corporation, the Seaboard Air Line Railway, to effect a complete consolidation of three railroad systems (Stover, 1955, 273). The new network consisted of 2,601 miles of line. Sandwiched between the Southern and Atlantic Coast Line systems, its main stem connected the Fall Line cities of the Carolinas and the Georgia-Alabama piedmont with the port of Norfolk and the Northeast coast (Fig. 18). It also provided a parallel link with Florida to that of the Atlantic Coast Line.

Figure 18. The Seaboard Air Line Railroad in 1900 (adapted from Stover, 1955, 264).

Richmond
Norfolk
Durham
Raleigh
Charlotte
Cheraw
Wilmington
Camden
Columbia
Atlanta
Birmingham
Charleston
Savannah
Montgomery
Columbus
Albany
Jacksonville
N
0 40 80 120 160
MILES
Tampa
Port Charlotte

Like the Atlantic Coast Line, the Seaboard Air Line had in 1900 developed the basic territorial structure which it was to retain until it merged with the Atlantic Coast Line in 1966.

Other Roads

Although most of the activity in Georgia-Carolina railroad development after the Civil War was promoted by the "big four" corporations, there were a number of significant attempts to develop long-line railroads directly opposed in interest to those entering the region from the north. These roads were similar to those built before the war in the sense that their main purpose was to serve the interests of particular communities in the three states, rather than to achieve the profitable long haul sought by the large corporations and associations based largely outside the region. For the most part they were attempts by Atlantic coast ports to penetrate the Appalachians and reach the lucrative agricultural trade of the Midwest.

Although one of the earliest schemes for Southeastern railroad development had envisaged a line from Charleston to Cincinnati, the project had never been completed. At the end of the Civil War the Appalachians were not crossed by railroad over the 700 miles from the Baltimore and Ohio line in the north to the Atlantic and Western-Nashville and Chattanooga route in the south. Every Atlantic city or

port, from Richmond and Norfolk to Savannah, however, planned to be the terminus for such a road. Virginia afforded one of the most active fields in which efforts were made to bridge the gap by consolidating existing lines and constructing new ones. Immediately after the war a group of Norfolk businessmen began to consolidate the Norfolk and Petersburg with the South Side, which led on to Lynchburg, and to these they added the Virginia and Tennessee, which carried the line to Bristol. From Bristol it was planned to build the Virginia and Kentucky to Cumberland Gap, and from there a railroad would be constructed to Cincinnati and Louisville, thus giving Norfolk connections with the Ohio River. Also it was hoped to build and consolidate lines which would send out a southwestern prong through Nashville to Memphis on the Mississippi. In 1870 a charter was secured for the Atlantic Mississippi and Ohio Railroad, which embraced these plans (Moger, 1951, 431-434).

This new system, which stretched 408 miles across southern Virginia, was in a strategic position to intercept traffic to Richmond, not only from Lynchburg and the Valley of Virginia, but from West Virginia. For Norfolk the merger was most beneficial. The lumber, wheat, and tobacco of southern Virginia, and the cotton of Alabama and Georgia passed to it in large volume. The Panic of 1873 brought the railroad into financial difficulties and it was put into receivership. Norfolk was concerned that

either the Atlantic Coast Line or the Richmond and Danville interests would buy the line. The road was purchased by a Philadelphia group, however, which was anxious to make Norfolk the focus of a much expanded system. Changing the misleading name of Atlantic Mississippi and Ohio, to Norfolk and Western, they launched a progressive program, making contracts for joint traffic with the East Tennessee Virginia and Georgia and reducing through passenger and freight rates (Moger, 1951, 434-436).

Even more important for Norfolk was the extension of the line into the vast coal fields of southwest Virginia and of West Virginia. The New River Railway, controlled by the Norfolk and Western, was pushed westward until in 1883 it reached the Pocahontas region. This was the beginning of a movement which was to make Norfolk one of the greatest coal ports in the world. Not satisfied with this, the management extended its line northwest along the boundary of West Virginia and Kentucky to the Ohio River, and from there to Columbus, Ohio, thus tapping the Midwest and opening to Norfolk the possibility of becoming also a great grain port (Wertenbaker, 1931, 300-301).

The first successful spanning of the mountains south of the Baltimore and Ohio Railroad was made by the Chesapeake and Ohio in 1873. The line was a consolidation of the Virginia Central and the recently completed Covington and Ohio. The road ran from West Point and Richmond

through Gordonsville and Covington, Virginia, through White Sulphur Springs and Charleston, to Huntington, West Virginia, on the Ohio. Successful with this move for western connections, Richmond sought also to tie itself to eastern North Carolina (Moger, 1951, 426-431). There was an inevitable collision of interests with Norfolk, which, fearing the entry of a competitor, hurried to build the Norfolk and Southern. This line was completed to Edenton, North Carolina, in 1881. The Norfolk and Southern, to a large extent, superceded the two canals as the artery of commerce from the North Carolina Sounds to Norfolk, and great quantities of cotton, lumber, naval stores, corn, peanuts, and early vegetables moved along it (Wertenbaker, 1931, 305-306).

As early as 1867 a railway named the Norfolk and Great Western had been proposed by the city of Norfolk to run from Norfolk to Danville. The plan envisaged the ultimate extension of the line to Bristol, where it was to connect with other railroads leading to Nashville. The people of Norfolk were solicited for subscriptions with the bait of vast growth in western trade, but the project was defeated by a narrow vote. In 1882 a new company was chartered under the name of the Atlantic and Danville. The line was completed to Danville in 1890 but passed into receivership in 1891. In 1899 it was leased by the Richmond and Danville, which gave the Southern system independent entry into Norfolk for the first time. The line

increased the flow of traffic from northwestern North Carolina to Norfolk (Wertenbaker, 1931, 306-307).

In North Carolina itself attempts were made to increase the accessibility of the western part of the state to the Atlantic Coast. The Cape Fear and Yadkin Valley Railway was one of these schemes. In 1815 a project to connect the Cape Fear with the Yadkin River by canal was reported to the General Assembly. Actual construction was begun but physical difficulties caused the canal to be abandoned. The idea of a connection was revived in 1832 by the incorporation of the Cape Fear and Yadkin Railroad Company. Ground was broken but the project again was abandoned (Eustler, 1925, 429-430).

The Western Railroad, which later became the Cape Fear and Yadkin Valley, was chartered in 1852 to construct a railroad from a point on the Cape Fear at or near Fayetteville to the coal-producing areas of Moore and Chatham Counties. It was not planned at first for this road to form the east-west connection which had been advocated by leaders throughout the Southeast, but rather to provide an outlet for the mineral deposits of the lower Deep River area. The road experienced a number of difficulties. Stock subscriptions were difficult to obtain, but eventually towns and counties along the road provided sufficient funds for it to be started. Even this aid, which amounted to $200,000 subscribed by Cumberland County and by Fayetteville, was insufficient to complete

the road to the coalfields. Of the total distance of 43 miles, only 11 miles was completed by 1858. The line was finally completed with substantial amounts of state aid.

During the 20 years between 1860 and 1880, little was done by the Western other than to plan for extensions, from Fayetteville to South Carolina, and through Greensboro to the valley of the Upper Yadkin (Eustler, 1925, 430-431). In the late 1870's negotiations were begun between the Western and the Mount Airy and Central Railroad, which had been chartered to build a railroad from Mount Airy, North Carolina, to some point on the North Carolina Railroad. As a result a consolidation of these two roads was arranged. In 1879 the Cape Fear and Yadkin Valley Railway Company was incorporated. In 1882 the road was given permission to build a line from Fayetteville to Wilmington. Construction was rapid. Greensboro was reached early in 1884 as was Bennettsville, South Carolina. The Cape Fear and Yadkin Valley chartered a subsidiary company, the South Carolina Pacific Railway, to build that portion of the line lying in South Carolina (Eustler, 1925, 431-435).

Wilmington subscribed 1,500 shares for its extension and the road was completed to that city in 1890. Mount Airy was reached in 1889, and connection was proposed to the Norfolk and Western, and via that system to the Midwest. The Cape Fear and Yadkin Valley Railway was the shortest line of railroad to the head-of-navigation for large areas of the middle and piedmont sections of the

state and extended into the state's largest port. Unfortunately this did not prevent its economic collapse in 1894. In 1898 the line was sold to the Atlantic Coast Line, which had made an agreement to share the line with the Southern Railway. Neither system was particularly interested in obtaining a coast-to-mountains route. The Atlantic Coast Line wanted the Bennettsville branch and the Wilmington-Fayetteville section as feeders to its main lines. The Southern wanted a feeder from the Central North Carolina piedmont to its Atlanta-Richmond line. The idea of the Cape Fear and Yadkin Valley as a trans-Appalachian road was never realized (Eustler, 1925, 435-441).

By the end of the war the first North Carolina scheme to penetrate the Appalachians, the Western North Carolina Railroad, had reached Morganton. The pre-Reconstruction legislature of 1866-1867 renewed the ante-bellum measure requiring the state to bear two-thirds of the cost of building the Western North Carolina, and construction was begun towards Asheville under a new company known as the Western Division of the Western North Carolina. Extensions were planned to Ducktown, 135 miles west of Asheville, and to Paint Rock, Tennessee, to link with the Tennessee roads (Brown, 1928, 188-200).

In 1873 both the Eastern and Western Divisions of the Western North Carolina experienced financial difficulties and went into receivership. The Southern Railway Security Company and other interests decided to have a

reorganization undertaken by the North Carolina Railroad Company (which already owned Western bonds to the value of $39,000), in which the Southern Railway Security Company was interested indirectly through the Richmond and Danville Railroad Company (see above). A consolidation of the Western North Carolina Railroad with the North Carolina Railroad was proposed. This was favored by many people in the state who still hoped for the ultimate completion of a North Carolina trunk line operated by a single company. An act authorizing consolidation was ratified in December, 1873, with restrictions concerning gauge changes and the maintenance of a through line (Brown, 1928, 210-218).

This act was opposed by the Richmond and Danville and by 1875 the situation was still unresolved. In June, 1875, the Western North Carolina was put up for sale at Salisbury and purchased by the state. State operation began in October, 1875. The rugged nature of the mountain area made progress slow, but by early 1880 the road had reached a point seven miles from Asheville. This was the closest the North Carolina state railroad system came to trans-Appalachian penetration, for in 1880 a New York City group offered to buy the Western North Carolina Railroad, and finish the road to Paint Rock and Ducktown (Brown, 1928, 218-226).

The proposal was welcomed by North Carolina Governor Jarvis, who advanced to the legislature seven chief

reasons why the road should be sold. They were, according to Brown:

> (1) That portion of the road already finished was greatly in need of repairs. To make these repairs and pay a floating debt of $30,000 the sum of $221,000 was needed at once. (2) The Paint Rock Line would cost $650,000 and the Ducktown line $5,330,000. It would take 30 years to complete the whole under the existing laws. (3) The earnings of the road could not be looked to for funds to carry on the construction. (4) There was no money in the state treasury to carry on the work. (5) "I do not desire to see another state bond issued to build this or any other road." (6) To further mortgage the road would result in foreclosure and sale. (7) The western part of the state should no longer be denied the rapid completion of the road. (Brown, 1928, 227).

The bill authorizing the sale of the state's interest in the road passed the house in March, 1880. By it the purchasers were permitted to organize a new Western North Carolina Railroad Company and required to complete the road to Paint Rock by July 1, 1881, and to Murphy by January 1, 1885. The initial purchasers quickly assigned their interest to the Richmond Terminal Company, which immediately acquired a controlling interest in the stock of the new company, and the Western North Carolina Railroad became a part of the Richmond and Danville. Potentially it provided a directly owned link for the Terminal between its East Virginia and Tennessee and its Richmond and Danville subsidiaries. The Paint Rock line was completed to a connection with the East Tennessee Virginia and Georgia in 1882 and the branch to Murphy in 1890. The result, however,

was not the North Carolina trunk line which had been promoted since the 1820's (Brown, 1928, 227-230).

The early Charleston dream, of breaking through the mountains of upper South Carolina and of joining with a road down the French Broad Valley in North Carolina and on to Cincinnati by one of various routes, had reached only as far as Walhalla in South Carolina by 1859. During the war nothing was done toward completing the road, but after 1865 Charleston began to agitate again for its completion. In 1868 Governor Orr stated to the South Carolina legislature that the state held stock, amounting to $1,310,000, which it was in danger of losing if the project was not completed, and that stock held in roads whose prosperity depended upon the completion of the Blue Ridge would depreciate. He said it would be unfortunate if the state allowed the road to be lost when it had cost the state, the city of Charleston (which owned stock to the value of $1,048,000), and a few private stockholders, over $3,250,000 (Simkins and Woody, 1932, 208-210).

In September, 1868, a special session of the legislature authorized additional support for the Blue Ridge and in July, 1869, bids were let for its construction. Due to financial mismanagement, however, nothing was done on the road. In the legislature of 1870-1871, friends of the Greenville and Columbia Railroad prepared a bill whereby the state's endorsement of the Blue Ridge bonds should be withdrawn, and $4,000,000 in bonds be endorsed for the

Greenville and Columbia. It was claimed that Greenville or Spartanburg would give better connections with the west. To prevent this bill's passage the Blue Ridge spent half a million dollars bribing senators, and the bill was defeated (Simkins and Woody, 1932, 210-213).

Both the Blue Ridge and the Greenville and Columbia were in financial difficulties, however, and in 1871 an act to promote the consolidation of the two roads passed the legislature. The two roads were sold to a small group of private individuals allied with the Richmond and Danville, and the state divested itself of all interests. The Richmond and Danville had no incentive to push another line through the Appalachians, and Charleston aims again were set back. The city attorney of Charleston urged that legal proceedings be instituted to protect the honest creditors and the interests of the city, charging that hundreds of thousands of the funds of the road had been applied to purposes and objects foreign to those indicated by the charter of the corporation. Nothing came of the effort (Simkins and Woody, 1932, 213-231).

The next attempt to bridge the Appalachians in the Carolina area did not come until 1886. In that year the Charleston Cincinnati and Chicago Railroad Company was organized to connect the coalfields of southwestern Virginia and eastern Kentucky with the Ohio River and the Atlantic coast. The route selected was an ambitious one. Beginning at Charleston, it was to cross the pine barrens,

the swamps of the Santee River, and pass through the cotton lands of Clarendon, Sumter, Kershaw, Lancaster, and York Counties in South Carolina. Entering the piedmont section south of Rock Hill, it would pass through Blacksburg, then cross over into North Carolina to serve the towns of Shelby, Rutherfordton, and Marion. From there it would cross the Blue Ridge to Johnson City, Tennessee, and then to Gate City, Virginia, and on across the Cumberland mountains to Ashland on the Kentucky side of the Ohio River -- a total distance of 621 miles. Three branches were later added to the proposed road: one from Lancaster to Charlotte, another from Blacksburg to Augusta by way of Newberry, and a third from Rutherfordton to Spartanburg (Way, 1931, 54-55).

The railroad was promoted as a great competitor to the Central of Georgia, and as a great boost for Charleston trade. Charleston refused to give substantial aid, apparently weary of wasted investments. Construction was begun from Camden, where the line linked with the South Carolina Railroad, to Charleston in 1887. In that year the 45 miles between Blacksburg and Rutherfordton was completed. There was great competition for the alignment of the route south of Blacksburg. Charlotte and York had been interested in acquiring the road, and Sumter challenged Camden at the southern end of the route. Also in 1887 work was begun on the Georgia and Carolina Midland from Augusta to Newberry, and it was decided that this

should be called the Augusta Division of the road (Way, 1931, 56-66).

The road was completed northward from Camden to Rock Hill in August, 1888. The intervening link between Rock Hill and Blacksburg via York was completed in December, 1888 (Way, 1931, 69-77). An editorial in the Rutherford Banner in 1889 stated that Rutherfordton was anticipating commercial relations with Charleston and pointed out that in ante-bellum days Charleston was the premier market of the up country.

> It is within the recollection of many that nine-tenths of the goods sold here were bought in Charleston and hauled from there in wagons. There is no reason why this intercourse should not be re-established, and we believe the City by the Sea Charleston will realize the importance of this matter and do its duty. . . . The importance to our people of the completion of the "three C's" did not fully dawn upon us until the News and Courier of Monday morning was laid upon our table, at eight o'clock the same evening. Then we began fully to appreciate the opening of this great line (Quoted in Way, 1931, 78).

Rutherfordton at this time was not only the northern terminus of the "Three C's" (as the Chicago, Cincinnati and Charleston had become known) but also of the Carolina Central which had been completed in 1886 (see above). In 1889 construction contracts were let for the 250-mile extension of the line from Rutherfordton to Minneapolis, Virginia. Here the road would connect with the Norfolk and Western Railway and also with a proposed extension of the Louisville and Nashville. Due to financial reverses,

however, progress in the road was slowed and it was not completed from Camden to Johnson City until after 1900 (Way, 1931, 79-86).

In 1893 the company was reorganized as the Ohio River and Charleston Railroad. This company decided to extend the line to the "Breaks" of the Big Sandy River in Kentucky, the line's eventual terminus. In 1897 it was decided to extend the line from Blacksburg to Gaffney. In 1897 the Ohio River and Charleston was purchased by the South Carolina and Georgia, the latter being an 1894 reorganization of the old South Carolina Railroad. The new overseer proposed to extend the Gaffney branch to Spartanburg. The entire system of the South Carolina and Georgia Railroad was leased to the Southern Railway in 1899 and after three years of independent operation was merged into the Southern Railway system in 1902 (Way, 1931, 86-95). This move gave the Southern access to another Atlantic port at Charleston, but the Southern was less interested in trans-Appalachian trade than in providing feeders for the Atlanta-Richmond line. Charleston benefitted little from the "Three C's."

With the failure of the "Three C's" in 1894, a movement was started in Charleston to revive the Blue Ridge project. The plan called for two lines. The southern branch would extend to Macon, where it was hoped traffic could be obtained from Birmingham. The northern branch would pass through Greenwood and Anderson to Knoxville,

following almost exactly the old Blue Ridge Railroad. Arguing for the road, the Charleston News and Courier in 1894 claimed that "Railroads operated in the interest of other ports and cities have built a Chinese Wall around Charleston." (Quoted in Way, 1931, 52.) The following year the paper said that

> For two generations it has been the dream of Charleston to establish direct communications with the great West. For over thirty years we have been waiting for someone else to build roads for us, and have gradually allowed every railroad in the State to pass from our possession, until today we do not control a single line (Quoted in Way, 1931, 53).

The Security Construction Company was organized in June, 1895, to build from Walhalla to Maryville. A few subscriptions were raised for this company, but Charleston, as in the case of the Chicago Cincinnati and Charleston, showed little interest and the project was finally abandoned in 1896 (Way, 1931, 53-54). A modification of the idea was developed in Georgia, in the years after 1870, with both Athens and Augusta anxious to become the focus of routes from the north.

The Augusta and Knoxville Railroad owed its origin to a desire by Augusta for direct communication between Augusta and Knoxville. The line was largely a response to the flow of trade between Chattanooga, Atlanta, Macon, and Savannah. It was completed in 1882 as far as Spartanburg, South Carolina, and a branch was constructed from Augusta to the Blue Ridge at Anderson in the hope that that line

would be completed to the Northwest. In 1883 the Augusta and Knoxville passed under the control of the Central of Georgia through lease to the Port Royal. Both roads were merged as the Port Royal and Western Carolina, providing a line from Greenville to the coast at Port Royal. The road eventually passed, with the Central of Georgia, into the Richmond Terminal system (Jones and Dutcher, 1890, 506-507).

Among other railroads projected from Augusta between 1870 and 1900 were: 1) The Carolina Knoxville and Western, intended to connect Augusta and Knoxville by a direct line. The city voted $100,000 to the scheme and Greenville also contributed, but the road failed to materialize. 2) The Augusta and Chattanooga Air Line, to run from Augusta to Chattanooga via Gainesville. Chattanooga subscribed $100,000 and many miles were graded but the road was never developed. 3) The Great Southern Railway, to strike south from Augusta via Millen and Jacksonville to Key West. It was heavily promoted but not constructed (Anon., 1878, 4). 4) The Georgia-Carolina Midland branch of the Chicago Cincinnati and Charleston (see above). 5) The Augusta Elberton and Chicago, intended to run via Elberton and Toccoa to Maysville, which was connected by rail to Knoxville. The line was completed between Elberton and Toccoa and ten miles were graded between Augusta and Elberton (75 miles) before the project collapsed. Augusta, therefore, despite vigorous efforts

at promotion, experienced little success in its attempts to increase the railroad traffic of the city (Jones and Dutcher, 1890, 511-512).

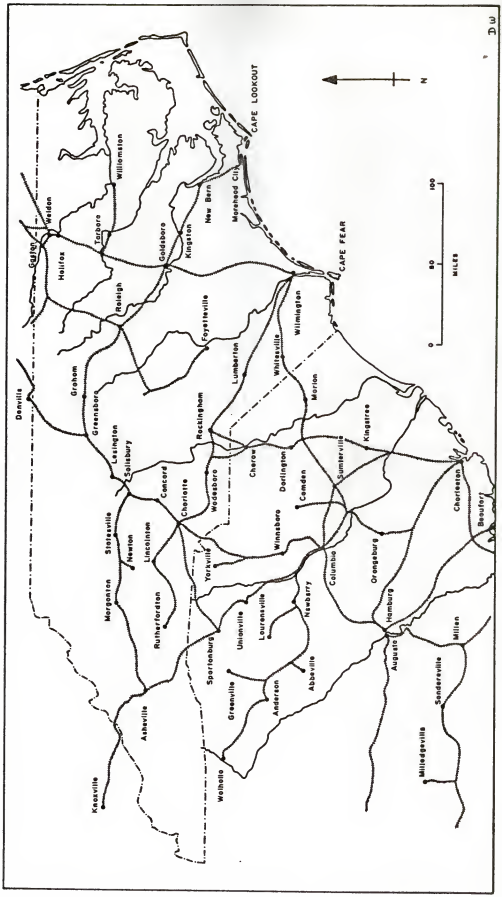
Athens, jealous of the trade being secured by Atlanta and Macon, also attempted to breach the mountains by promoting a line northwestward via Rabun Gap to Knoxville. In 1868 the Georgia Railroad obtained a legislative charter to build part of the way but made construction conditional on an assurance that the connection south from Knoxville would be built. Nothing came of this, but Athens's interests proceeded to build the Northeastern Railroad Line, without the help of the Georgia Railroad, to a connection with the Atlanta and Richmond Air Line in 1877 (McGuire, 1934 A, 14-20). This became necessary because of the alignment of the latter to the north of Athens. According to the Athens newspaper of the time, Athens could have had the Air Line for a subscription of $100,000 but took the position that the road could not afford to leave her out (McGuire, 1934 A, 13). At that time the Atlanta and Richmond line was associated with the Seaboard Air Line at Charlotte, but the Air Line was soon leased by the Richmond Terminal (McGuire, 1934 A, 24-25).

The Richmond Terminal offered to extend the Northeastern to Clayton, if the city of Athens would agree to sell its share of the company (McGuire, 1934 A, 25-26). The city agreed in 1881, on condition that the Richmond Terminal extend the line to Clarkesville by January 1, 1882,

to Tallulah Falls before July 1, 1882, and to Clayton within five years. The extension to Tallulah Falls was completed, but there construction stopped, although the company purchased the property and franchises of the Augusta and Knoxville which would have provided competition (McGuire, 1934 B, 118-119).

The Richmond Terminal had already acquired a controlling interest in the Western North Carolina Railroad and extended it from Asheville to Morristown, Tennessee, via Wolf Creek Gap, there securing a connection between its main line at Salisbury and the Tennessee Railroads. It had also achieved a connection further south by purchasing a majority of the stock of the Asheville and Spartanburg which had been sold under foreclosure in 1887. These connections rendered it independent of the Rabun Gap route and discouraged it from investing there, despite its promises to Athens. The Richmond Terminal did, however, encourage a connection with the Northeastern from the south. The Macon and Northern was induced to build to Athens via Monticello and Madison, and was completed in 1889 (McGuire, 1934 B, 128-130). The Georgia Carolina and Northern, which became Athens's major railroad, was the result of a desperate effort by the Seaboard Air Line to break through the cordon of roads which the Richmond and Danville and the Atlantic Coast Line had thrown around it. Arriving in Athens in 1891, it diverted all attention from a trans-Appalachian route (McGuire, 1934 B, 128-130).

Figure 19. The railroad network of the Carolinas in 1876 (derived from Map, Anon., 1876).


Danville
Salem
Weldon
Halifax
Tarboro
Williamston
Goldsboro
Kinston
New Bern
Morehead City
CAPE LOOKOUT
Graham
Greensboro
Raleigh
Fayetteville
Wilmington
CAPE FEAR
Lexington
Salisbury
Rockingham
Lumberton
Whiteville
Marion
Statesville
Newton
Lincolnton
Concord
Cheraw
Darlington
Camden
Kingstree
Morganton
Rutherfordton
Spartanburg
Union
Laurens
Newberry
Columbia
Orangeburg
Hamburg
Charleston
Beaufort
Asheville
Greenville
Anderson
Abbeville
Augusta
Millen
Sandersville
Milledgeville
Knoxville
Walhalla
0
50
100
Miles
N

Expansion and Integration of the Railroad Network

There were, as the preceding sections make clear, severe rationalizations of corporate operations between 1860 and 1900, as well as shifts of emphasis with respect to trade flows. In spite of (or occasionally because of) these major economic upheavals, however, railroad mileage continued to grow. In 1861 Georgia and the Carolinas had a very fragmented railroad network which focused on the major ports and had very few lateral (parallel to the coast) connections (Fig. 14). By 1880, due not only to the promotional activities of the ports and the Fall Line towns, but more particularly to the appetites of the emerging trunk lines, the railroad network had become interconnected to a much larger degree (Fig. 19 & 20). The orientation of lines to the ports was becoming less pronounced. The Appalachian barrier remained unbreached between Virginia and northwest Georgia, but the piedmont and coastal plain were laced with lines both from the Carolina-Georgia ports and from the southwest and the northeast. Most cities had removed obstacles to through traffic and the majority of major rivers had been bridged, but the gauge problem remained.

This problem became so pressing that in the 1880's agreement was reached for a standard gauge for the Southeast's railroads. The time of the changeover was arranged

Figure 20. The railroad network of Georgia and Alabama in 1879 (derived from Map, Anon., 1879).

N
Trenton
Quitman
Cuthbert
Albany
Leesburg
Americus
Columbus
Preston
Dawson
Blakely
Newton
Camilla
Sasser
Dallas
Colquitt
Arlington
Edison
Bainbridge
Thomasville
Moultrie
Donalsonville
Seminole
Cairo
Whigham
Climax
Meigs
Pelham
Ochlocknee
Sylvester
Ashburn
Tifton
Ty Ty
Omega
Norman Park
Ellenton
Doerun
Berlin
Ellaville
Leesburg
Albany
Sumner
Arabi
Cordele
Vienna
Pinehurst
Byromville
Dooling
Unadilla
Fort Valley
Perry
Hawkinsville
Abbeville
Alma
Jesup
Waycross
Folkston
Homerville
Nahunta
Brunswick
Jacksonville
Fernandina
Yulee
Hilliard
Callahan
Macclenny
Baldwin
Lake City
Live Oak
Jasper
Valdosta
Quitman
Madison
Tallahassee
St. Marks
Perry
Steinhatchee
Cross City
Crystal River
Inverness
Brooksville
Tarpon Springs
Clearwater
Dunedin
Tampa
Plant City
Lakeland
Winter Haven
Bartow
Auburndale
Haines City
Kissimmee
Orlando
Sanford
Deland
Daytona Beach
New Smyrna Beach
Titusville
Cocoa
Melbourne
Vero Beach
Fort Pierce
Stuart
Okeechobee
Palm Beach
West Palm Beach
Boca Raton
Pompano Beach
Fort Lauderdale
Hollywood
Miami
Homestead
Key West
Marianna
Chipley
Bonifay
Graceville
Chattahoochee
Quincy
Havana
Monticello
Madison
Greenville
Perry
Lloyd
Tallahassee
Woodville
Crawfordville
Wakulla
Sopchoppy
Panacea
Carrabelle
Apalachicola
Eastpoint
Port St. Joe
Wewahitchka
Blountstown
Bristol
Sumatra
Greensboro
Quincy
Gretna
Midway
Havana
Chattahoochee
Bainbridge
Donalsonville
Seminole
Cairo
Whigham
Climax
Meigs
Pelham
Ochlocknee
Sylvester
Ashburn
Tifton
Ty Ty
Omega
Norman Park
Ellenton
Doerun
Berlin
Ellaville
Leesburg
Albany
Sumner
Arabi
Cordele
Vienna
Pinehurst
Byromville
Dooling
Unadilla
Fort Valley
Perry
Hawkinsville
Abbeville
Alma
Jesup
Waycross
Folkston
Homerville
Nahunta
Brunswick
Jacksonville
Fernandina
Yulee
Hilliard
Callahan
Macclenny
Baldwin
Lake City
Live Oak
Jasper
Valdosta
Quitman
Madison
Tallahassee
St. Marks
Perry
Steinhatchee
Cross City
Crystal River
Inverness
Brooksville
Tarpon Springs
Clearwater
Dunedin
Tampa
Plant City
Lakeland
Winter Haven
Bartow
Auburndale
Haines City
Kissimmee
Orlando
Sanford
Deland
Daytona Beach
New Smyrna Beach
Titusville
Cocoa
Melbourne
Vero Beach
Fort Pierce
Stuart
Okeechobee
Palm Beach
West Palm Beach
Boca Raton
Pompano Beach
Fort Lauderdale
Hollywood
Miami
Homestead
Key West
Marianna
Chipley
Bonifay
Graceville
Chattahoochee
Quincy
Havana
Monticello
Madison
Greenville
Perry
Lloyd
Tallahassee
Woodville
Crawfordville
Wakulla
Sopchoppy
Panacea
Carrabelle
Apalachicola
Eastpoint
Port St. Joe
Wewahitchka
Blountstown
Bristol
Sumatra
Greensboro
Quincy
Gretna
Midway
Havana
Chattahoochee
0 20 40 60
MILES

for May 31st and June 1st, 1886. In the Georgia-Carolina area ten roads made the changeover on May 31st: the Louisville and Nashville; the Nashville Chattanooga and St. Louis; the Memphis and Charleston; the Alabama Great Southern; the Cincinnati Southern; the Cincinnati Selma and Mobile; the Montgomery and Eufala; the Southwestern and Georgia; the Pensacola and Atlanta; and the Florida Railway and Navigation Company. All other lines were changed on June 1st. On both days the work was completed between 3:30 a.m. and 4:00 p.m., during which time all train movements were suspended. When traffic was resumed after 4:00 p.m. on June 1st, 1866, the rail network, not only of Georgia and the Carolinas but of the whole nation, had become a physically integrated network (Taylor and Neu, 1956, 80-81).

Between 1880 and 1900 the Georgia-Carolina railroad network was filled in rather than extended out, and additions were relatively minor (Fig. 21 & 22). Of far greater importance was the emergence of the major trunk line systems which structured the network into four major north-south oriented trade arteries -- three from the Southeast to the Northeast and one from Florida to the Midwest via Atlanta. The large corporations which appeared in the 1890's were a natural consequence of the vigorous trade wars which developed between the longer roads of the area after the Civil War (Joubert, 1949, 1-30). In the early 1870's a trade recession combined with low freight rates

Figure 21. The railroad network of the Carolinas in 1896 (derived from Map, Anon., 1896).

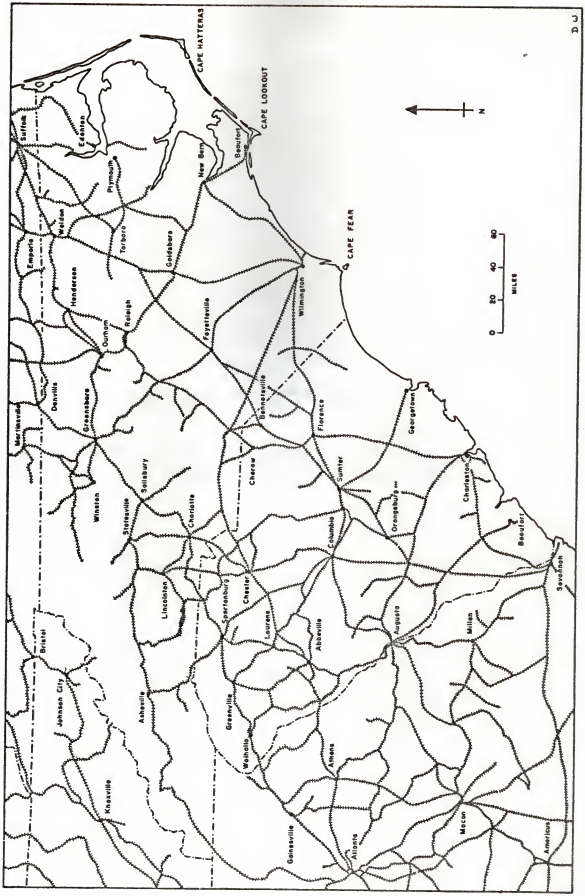
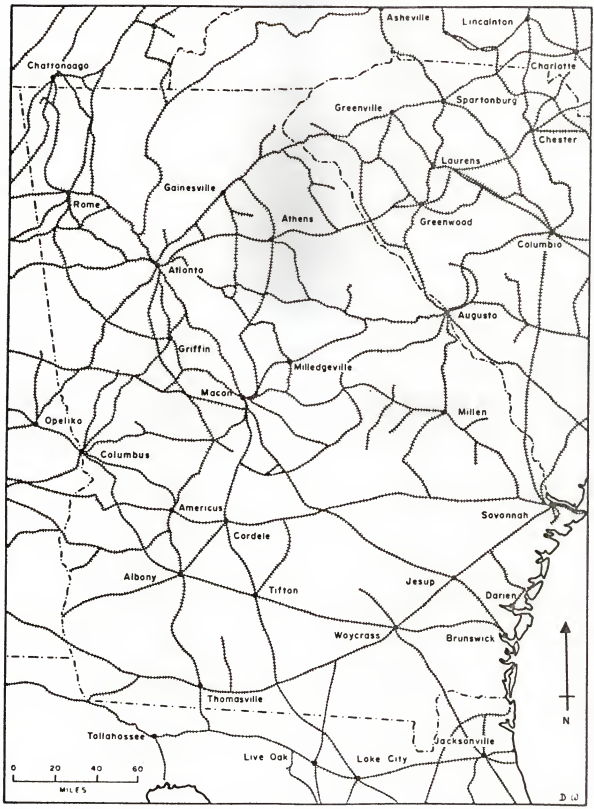

CAPE HATTERAS
CAPE LOOKOUT
CAPE FEAR
N
0 20 40 60
MILES
Suffolk
Edenton
Plymouth
New Bern
Beaufort
Emporia
Weldon
Torboro
Goldsboro
Henderson
Raleigh
Fayetteville
Wilmington
Durham
Danville
Greensboro
Bennetsville
Florence
Georgetown
Martinsville
Salisbury
Cheraw
Sumter
Charleston
Winston
Statesville
Charlotte
Columbia
Orangeburg
Beaufort
Savannah
Lincolnton
Spartanburg
Chester
Laurens
Augusta
Milton
Bristol
Abbeville
Johnson City
Asheville
Greenville
Walhalla
Athens
Knoxville
Gainesville
Atlanta
Macon
Americus

Figure 22. The railroad network of Georgia, 1892 (derived from Map, Anon., 1892).


Asheville
Lincolnton
Chattanooga
Charlotte
Greenville
Spartanburg
Chester
Laurens
Gainesville
Rome
Athens
Greenwood
Columbia
Atlanta
Augusta
Griffin
Milledgeville
Macon
Millen
Opelika
Columbus
Savannah
Americus
Cordele
Albany
Tifton
Jesup
Darien
Waycross
Brunswick
Thomasville
N
Tallahassee
Jacksonville
Live Oak
Lake City
0 20 40 60
MILES

to eliminate many lines and expand others. In the 1880's other developments also served to favor consolidation. The economic prosperity of that decade produced a surge of new independent short lines. These small lines frequently made severe inroads on local traffic, hurting the major rail systems. In 1889 the Central of Georgia bemoaned the opening of six new competing roads, and there were similar complaints from other companies. Most of these new roads were courted to align themselves with one of the trunk-line routes. If they showed reluctance, they were usually absorbed into one of the larger companies by financial takeover.

After the widespread company failures of 1876, railroads began to concentrate on cooperation, as they had immediately after the war, producing such arrangements as the Green Line, the Coast Line, the Southern Steamship Association, and the association of the Louisville and Nashville and the Central of Georgia. Such arrangements proved transitory, however, and inevitably led to further trade competition and rate cutting (Joubert, 1949, 31-62). The most disastrous of all Southeastern trade wars took place in June and July of 1894. This conflict resulted in even sharper company reductions than those between the trunk lines in 1876 (Joubert, 1949, 63-68). It not only produced the Southern Railway Company, the Norfolk and Western, the Seaboard Air Line, the Atlantic Coast Line, the Central of Georgia, and the Louisville and Nashville,

but put them all in the hands of an associated group of financiers controlling the New York Central and the Pennsylvania systems. The result, by 1903, was a virtual elimination of the trade competition which had been responsible for shaping the transport sequence of Georgia and the Carolinas up to that date (Moger, 1951, 454-457).

CHAPTER 6

THE TRANSPORT EXPANSION SEQUENCE IN GEORGIA AND THE CAROLINAS IN GENERAL PERSPECTIVE, 1670-1900

Introduction

In order to facilitate comparative analysis between the African-derived model of transport expansion mentioned in Chapter 1, and the American experience outlined in the preceding four chapters, it seems necessary to summarize and restructure the information along lines more closely approximating the presentation techniques of Taaffe and associates. With this need in mind, a set of schematic diagrams of the transport expansion process in Georgia and the Carolinas between 1670 and 1900 have been prepared. These figures (Figures 23-30) are derived from the same sources as the maps portrayed in Figures 1 through 22. They differ from these maps in their greater distortion of the real elements of earth-space.

Figures 23-30 are abstracts provided to ease discussion of general regularities in the transport expansion process in the three-state area, and to make these regu-

larities visible for comparison with regularities observed elsewhere. Specifically they have been constructed to emphasize directional and geometric aspects of the transport network frequently obscured by the local details of the topographic map. They are intended to remove "noise" from the systems under analysis. It is not pretended that the geometry of the diagrams portrays the absolute geography of the Georgia-Carolina area. Care has been taken, however, in the distance and location manipulations necessary for the formulation of the diagrams to maintain all significant territorial relationships.

In terms of its general topography, the Georgia-Carolina area has the shape of a rough-edged trapezoid with parallel sides along the coast and the mountain boundary. In terms of detail, the mountain and coast boundaries curve gradually away from each other between Virginia on the north, and Alabama and Florida on the south. The main problem in assembling the diagrams was one of approximating the rectangular geometry of the Taaffe model, while at the same time maintaining the important real topographic relationships of the Georgia-Carolina area.

The greatest obstacle was provided by the distribution of the towns, the location of which, in the early years of settlement, had been conditioned by the disposition of the river systems. The major rivers flow uniformly from the mountains across the piedmont and the coastal plain to the sea. As they do this they tend to diverge

slightly from each other so that the eastward-flowing Roanoke gives way progressively, to the south, to the southeastward-flowing Savannah and the southward-flowing Chattahoochee. At the same time there is a promounced tendency for these rivers to lie roughly perpendicular to the gently curving Fall Line.

In order to circumvent graphical complications, the Fall Line and the rivers were portrayed in the diagrams as straight lines, with the rivers perpendicular to the Fall Line. The diagrams were then structured according to the disposition of the various route nodes (cities) with respect to the Fall Line. The main cities of the Fall Line are relatively evenly spaced on the earth's surface and could therefore be represented with little distortion by even spacing in the diagram. The spatial distribution of the coastal and upland cities presented greater problems of retaining topographic dimensions because of the parallel arrangement of the rivers.

This parallel arrangement generally abbreviated the real distances between coastal cities and extended the real distances between piedmont cities. It did not, however, appear to distort in any way the significant spatial relationships of the towns of the region. Coastal and upland cities were thus positioned in the diagram at distances proportional to their true-distance from the Fall Line on the earth's surface. Cities on rivers were placed on the lines corresponding to major rivers in the diagram.

In the few cases where ports were not connected to the Fall Line by river (e.g. Pensacola, Jacksonville, Brunswick, Beaufort) they were allotted to their respective positions between rivers. They invariably corresponded in the diagram with a Fall Line town sharing a river outlet to the sea (Pensacola-Montgomery, Jacksonville-Albany, Brunswick-Macon, Beaufort-Columbia).

In an attempt to show the relationship between transport expansion and urban growth, the size of cities was also incorporated in the diagrams. Reliable information on population is not available for the period before 1790, so that city-size differentials are only indicated beginning with the 1800 graph. After that date city populations are exhibited proportionately where they exceed 2,500, the total now used by the U.S. Census as the base population for its "city" classification. Towns having less than that number of people were denoted by a small solid circle. The population figures were derived from the decennial censuses of the United States, 1790-1800. A more detailed growth sequence containing precise figures is provided in Tables 1-3.

In order to provide an adequate survey of the transport sequence, the period of evolution was partitioned into eight intervals. The nineteenth century was divided into five equal 20-year periods based on the availability of population figures for the initial year of each decade. The eighteenth century was divided into three periods

TABLE 1

POPULATIONS OF CITIES WITH MORE THAN 2500 PEOPLE IN NORTH CAROLINA, 1790-1900*

Cities	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Asheville	..	..	..	..	..	..	..	..	..	2,616	10,235	14,694
Burlington	..	..	..	..	..	..	..	..	..	..	..	3,692
Charlotte	..	..	..	..	..	..	..	..	4,473	10,541	11,557	18,091
Concord	..	..	..	..	..	..	..	..	..	..	4,339	7,910
Durham	..	..	..	..	..	..	..	..	..	..	5,485	6,629
Edenton	..	..	..	..	..	..	..	..	..	..	..	3,046
Elizabeth City	..	..	..	..	..	..	..	..	..	..	3,251	6,348
Fayetteville	..	..	..	3,532	2,868	4,285	4,646	4,790	4,660	3,485	4,222	4,670
Gastonia	..	..	..	..	..	..	..	..	..	..	..	4,610
Goldsboro	..	..	..	..	..	..	..	..	..	3,286	4,017	5,877
Greensboro	..	..	..	..	..	..	..	..	..	..	3,317	10,035
Greenville	..	..	..	..	..	..	..	..	..	..	..	2,565
Henderson	..	..	..	..	..	..	..	..	..	2,561	4,191	3,746
Hickory	..	..	..	..	..	..	..	..	..	..	..	2,535
High Point	..	..	..	..	..	..	..	..	..	..	..	4,163
Kinston	..	..	..	..	..	..	..	..	..	..	..	4,106
Mt. Airy	..	..	..	..	..	..	..	..	..	..	..	2,680
New Bern	..	..	..	3,663	3,796	3,690	4,681	5,432	6,443	5,849	7,843	9,090
Raleigh	..	..	..	..	..	..	4,578	4,780	7,790	9,265	12,678	13,643
Rocky Mt.	..	..	..	..	..	..	..	..	..	..	..	2,937
Salem	..	..	..	..	..	..	..	..	..	..	2,711	3,642
Salisbury	..	..	..	..	..	..	..	..	..	2,723	..	..
Washington	..	..	..	..	..	..	..	..	..	..	3,548	4,842
Wilmington	..	..	..	2,633	3,791	5,335	7,264	9,552	13,446	17,350	20,056	20,976
Wilson	..	..	..	..	..	..	..	..	..	..	..	3,525
Winston	..	..	..	..	..	..	..	..	..	2,854	8,018	10,008

*Source: U.S. Decennial Census.

TABLE 2

POPULATIONS OF CITIES WITH MORE THAN 2500 PEOPLE IN SOUTH CAROLINA, 1790-1900*

Cities	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Abbeville	..	..	..	..	..	..	..	..	..	..	..	..
Aiken	..	..	..	..	..	..	..	..	..	..	..	3,766
Beaufort	..	..	..	..	..	..	..	..	..	2,549	3,587	4,110
Camden	..	..	..	..	..	..	..	..	..	..	3,533	2,441
Charleston	16,359	18,824	24,711	24,780	30,289	29,261	42,985	40,522	48,956	49,984	54,955	55,807
Chester	..	..	..	..	..	..	..	..	..	..	2,703	4,075
Columbia	..	..	..	..	3,310	4,340	6,060	..	..	13,003	15,353	21,108
Darlington	..	..	..	..	..	..	..	..	..	..	..	3,028
Florence	..	..	..	..	..	..	..	..	..	..	3,395	4,647
Gaffney	..	..	..	..	..	..	..	..	..	..	..	3,937
Georgetown	..	..	..	..	..	..	..	..	..	2,557	2,895	4,131
Greenville	..	..	..	..	..	..	..	..	..	6,160	8,607	11,860
Greenwood	..	..	..	..	..	..	..	..	..	..	..	4,284
Laurens	..	..	..	..	..	..	..	..	..	..	..	4,029
Newberry	..	..	..	..	..	..	..	..	..	..	3,020	4,067
Orangeburg	..	..	..	..	..	..	..	..	..	..	2,964	4,455
Rock Hill	..	..	..	..	..	..	..	..	..	..	2,744	5,485
Spartanburg	..	..	..	..	..	..	..	..	..	3,253	5,544	11,395
Sumter	..	..	..	..	..	..	..	..	..	..	3,865	5,673
Union	..	..	..	..	..	..	..	..	..	..	..	5,400

*Source: U.S. Decennial Census

TABLE 3

POPULATIONS OF CITIES WITH MORE THAN 2500 PEOPLE IN GEORGIA, 1790-1900*

Cities	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Albany	..	..	..	..	..	..	..	..	..	..	4,008	4,606
Americus	..	..	..	..	..	..	..	..	3,259	3,635	6,398	7,674
Athens	..	..	..	..	..	..	..	..	4,251	6,099	8,639	10,245
Atlanta	..	..	..	..	..	..	2,572	9,554	21,789	37,409	65,533	89,872
Augusta	..	..	..	..	6,710	6,403	11,753	12,493	15,389	21,891	33,300	39,441
Bainbridge	..	..	..	..	..	..	..	..	..	..	..	2,641
Barnesville	..	..	..	..	..	..	..	..	..	..	..	3,036
Brunswick	..	..	..	..	..	..	..	..	..	2,891	8,459	9,081
Cartersville	..	..	..	..	..	..	..	..	..	..	3,171	3,135
Cedartown	..	..	..	..	..	..	..	..	..	..	..	2,823
Columbus	..	..	..	..	..	3,114	5,942	9,621	7,401	10,123	17,303	17,614
Cordele	..	..	..	..	..	..	..	..	..	..	..	3,473
Cuthbert	..	..	..	..	..	..	..	..	..	..	..	2,641
Dalton	..	..	..	..	..	..	..	..	..	2,516	3,046	4,315
Dublin	..	..	..	..	..	..	..	..	..	..	..	2,987
Elberton	..	..	..	..	..	..	..	..	..	..	..	3,834
Gainesville	..	..	..	..	..	..	..	..	..	..	3,202	4,382
Griffin	..	..	..	..	..	..	..	..	3,421	3,620	4,503	6,857
LaGrange	..	..	..	..	..	..	..	..	..	..	3,090	4,274
Macon	..	..	..	..	..	3,927	5,720	8,247	10,810	12,749	22,746	23,272
Marietta	..	..	..	..	..	..	..	2,680	..	..	3,384	4,446
Milledgeville	..	..	..	..	..	..	..	..	2,750	3,800	3,322	4,219
Newnan	..	..	..	..	..	..	..	2,546	..	..	2,859	3,654
Rome	..	..	..	..	..	..	..	4,010	2,748	3,877	6,957	7,291
Savannah	..	5,146	5,215	7,523	7,303	11,214	15,312	22,292	28,235	30,709	43,189	54,244
Summerville	..	..	..	..	..	..	..	..	..	..	..	3,245
Thomasville	..	..	..	..	..	..	..	..	..	2,555	5,514	5,322
Valdosta	..	..	..	..	..	..	..	..	..	..	2,854	5,613
Washington	..	..	..	..	..	..	..	..	..	..	2,631	3,500
Waycross	..	..	..	..	..	..	..	..	..	..	3,364	5,919

*Source: U.S. Decennial Census.

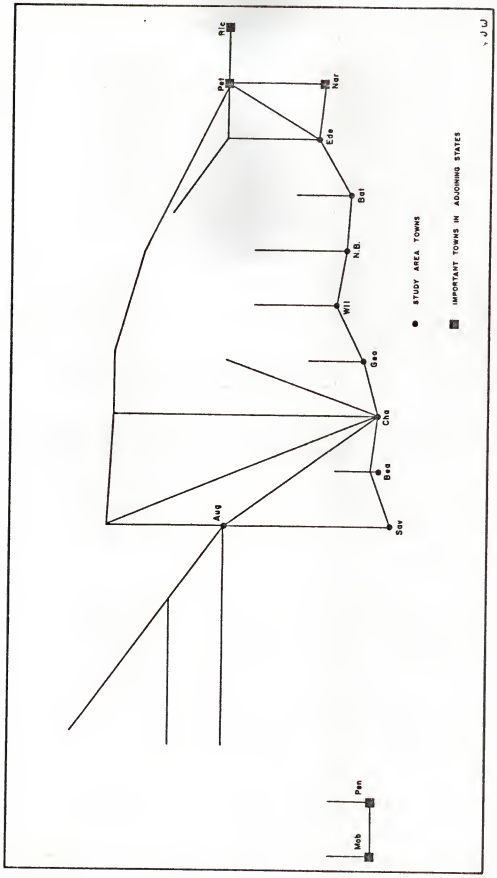
based on the availability of reliable map sources. The following pages trace the transport sequence through these eight sets of years: 1670-1740, 1740-1770, 1770-1800, 1800-1820, 1820-1840, 1840-1860, 1860-1880, 1880-1900. The choice of particular terminal dates for the eight periods does not imply that the events of those years have any critical significance for the transport expansion process.

1670-1740

As indicated in Chapter 2 and Figure 23, the main feature of the transportation network in 1740 was a lack of any real development. The urban pattern consisted of a string of small port villages separated from each other by quite large distances. These ports were largely independent of each other, relying on northern and overseas trade for their livelihood, rather than the exchange of regional produce. For the most part this trade derived from the exploitation of newly settled coastal areas immediately surrounding the ports. Virtually all of these areas were accessible from coastal or riverine waterways. As a result the demand for land transportation facilities developed only slowly.

The only economic activity to involve the interior at this time was the fur trade which, in contrast to the agricultural settlements, utilized vast areas of the

Figure 23. The Georgia-Carolina transport network in 1740: rivers and roads (sources: Map, Moseley, 1733; Map, Wright, 1763).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IMPORTANT TOWNS IN ADJOINING STATES

country as its resource base. Although this trade was diffuse and was subject to periodic shifts, it tended to be concentrated in the main settlements of some specific Indian groups (e.g. the Catawbas, the Cherokees, and the Creeks). As a consequence a few important trails were established between the Indian villages and the coast ports involved in the trade. The earliest trail ran from the James River near Richmond to the Catawbas and Cherokee.

When Charlestown was established in 1670, shorter land routes to the Indian villages began to focus there. The trails were often difficult to travel, however, and by 1700 the more easily traversable Savannah River had become the main artery of this trade. Its use led directly to the establishment of the settlements of Savannah and of Augusta in the 1730's. Augusta was the only urban node to emerge in the interior before 1750. It developed due to a location at the junction of trails to Savannah and Charlestown from the Cherokee villages on the upper Savannah, and from the Creek Villages in central and west Georgia and eastern Alabama. Even before Augusta was founded by Georgia, there had been a South Carolina equivalent called Savanna Town, established very soon after Charlestown. Elsewhere in the interior the only permanent settlements consisted of a few small forts and trading posts on the main trails (e.g. Ninety-Six).

Due to its early start in organizing the Indian trade, and to its designation as the proprietary and imperial

capital of South Carolina, Charlestown was, from the beginning, the preeminent port of the Georgia-Carolina coast. This dominance had little to do with physical factors. Both Savannah and Norfolk had better harbors. The former, however, suffered from the competition of Petersburg and Richmond which could accomodate the smallest ocean-going vessels of that period. By the time Savannah was established, Charlestown had been organizing its trade territory for 50 years. The routes to the interior that developed in those years were sufficient to secure continuing traffic for the port. The capital investments of the city's mercantile houses also served to deter their migration to newer locations of uncertain profitability. Finally Charlestown was further removed than Savannah from the Spanish settlements of Florida and therefore less exposed to attack from the south. This better protection was an incentive for regional commercial investment to favor the South Carolina port before 1763.

In this wilderness area of the lowlands, where swampy terrain made direct overland travel difficult and road construction costly, waterways provided the most attractive avenues of transport. As a result the important penetration lines followed the rivers across the coastal plain towards the piedmont. The greatest exception was the trading path from Virginia. This attempted to secure easy access to the Southeastern interior by striking inland along the watershed between the Roanoke

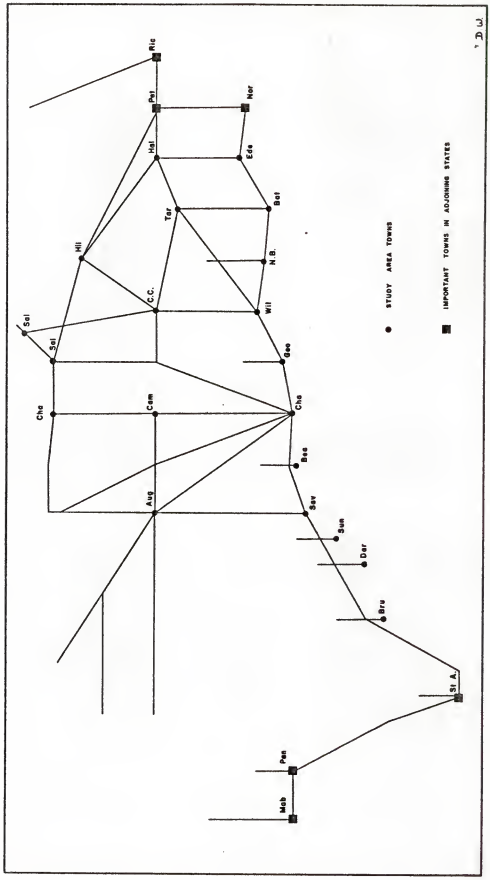
and the more southerly North Carolina rivers and then turning south along the piedmont slope to cross the major rivers of the Carolinas in their upper reaches where the streams were easily forded.

The only roads constructed in the period were barely worthy of the name and were largely supplemental to the rivers. They were built from military, as much as from commercial, necessity. Most of them were created to ensure alternative routes, for troop movements in the event of either Indian or Spanish hostility, or for trade in the infrequent case that rivers became impassable. By 1740 several of the Indian trails in South Carolina had been "improved" and a road had been cut from Savannah to Augusta. The longest road in existence at that time was the coast road linking all of the ports between Savannah and Virginia. The road was primarily of military significance and of such poor construction that coastwise traffic preferred to move by sea.

1740-1770

Between 1740 and 1770 some distinct new developments were introduced into the transportation pattern (Fig. 24). Beginning about 1750 agricultural colonization from the Georgia-Carolina coast via the river valleys was accompanied by an overland penetration of farmers from Tidewater Virginia and eastern Pennsylvania. Following the old trail

Figure 24. The Georgia-Carolina transport network in 1770: rivers and roads (sources: Map, Collet, 1770; Map, Mouzon, 1775).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of the Indian traders or the natural route provided by the Great Valley through Pennsylvania, Maryland, and western Virginia, these settlers spread quickly over large areas of the upper Carolinas. They were slowed only by the Indian boundary which they pushed consistently to the south.

Almost immediately after these settlers became established, there was a demand for imported goods, for services, and for markets. Parallel with the initial colonization, and not consequent to it, there emerged a series of small villages (Charlotte, Salisbury, Salem, Bethania, Bethabara, and Hillsboro) at strategic points on the major ingress routes. At first, because they had little choice, the commercial connections of these villages were with Pennsylvania and Virginia, but dissatisfaction with such hazardous and time-consuming long-distance travel led to efforts by these villages to establish better communications with the Carolina coast. Because of its earlier provision of a route to the Catawbas which intersected the Virginia Indian trail in the vicinity of Charlotte, Charlestown was able to attract the most considerable amounts of this new trade. Unhappy with a monopoly of their business, however, the piedmont towns, particularly those of central North Carolina, tried also to establish alternative routes to the coast at Wilmington and Edenton.

These routes between the piedmont and the coast centers were, particularly in North Carolina, combination

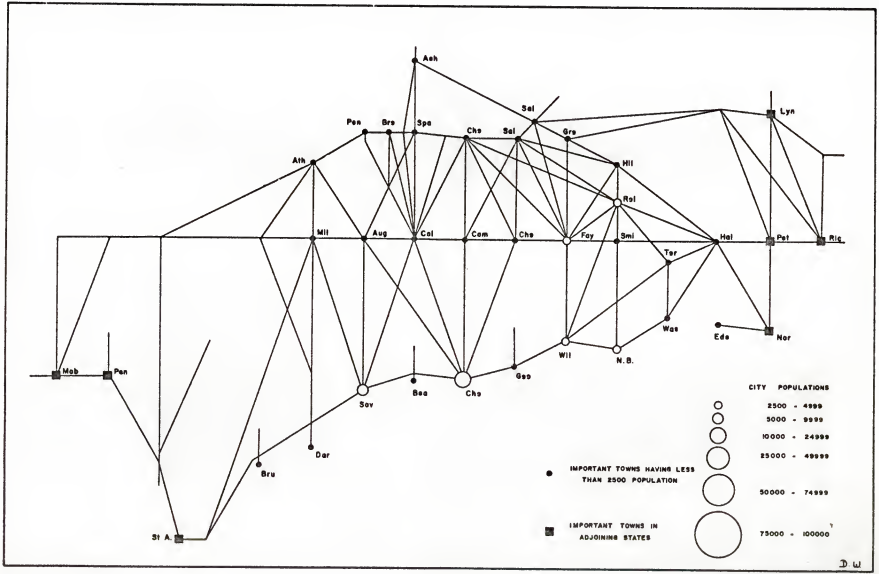
road-river routes. Roads were constructed from the upland villages to the head-of-navigation points of the river, where goods were then transferred to boats to be floated down to the coast. At these transfer points, processing and packing establishments for meats and cereals were established along with storage warehouses and retail stores. Another set of small villages quickly developed at the heads-of-navigation as the roads of the piedmont began to focus on these trading centers. By 1770 Halifax, Cross Creek-Campbellton, and Camden were thriving on the new upland agricultural trade, and smaller centers were apparent at Pine Tree Hill (Cheraw) and Congarees (Columbia). Another head-of-navigation town, Tarboro, owed its prosperity to servicing the lumber trade of surrounding areas of the upper coastal plain rather than the agricultural settlements of the piedmont.

At the same time that urban and transport expansion was affecting the interior Carolinas, settlement was also spreading along the coast to the southwest. This was a continuation of the colonization of the rich alluvial areas of the Sea-Islands and the river estuaries, which had begun around Charlestown after 1670. Attempts to colonize the coastal plain away from the coast in Georgia and the Carolinas met with disappointment, and consequently urban development was slow. Several small ports were established between 1740 and 1770 (Brunswick, Darien, and Sunbury), but their hinterlands were severly limited and their development of penetration lines was negligible.

After the acquisition of Florida in 1763, the military road from Virginia was extended to St. Augustine, but it avoided the swampy coastal areas and therefore had little effect on the villages south of Savannah. To the north, as settlement expanded across the coastal plain in North Carolina, the main coast road was shifted to a more direct line from Richmond to Wilmington. This benefitted Halifax and Tarboro, the new head-of-navigation towns, and decreased through traffic at New Bern, Bath, and Edenton. The significance of the coast road was enhanced at the end of the Colonial Period by its selection as the main route of the colonial mails between the Northeast and Florida.

The traffic flows of the period served to enhance the fortunes of Savannah, Charlestown, and Wilmington at the expense of the ports which had poor interior connections. Edenton suffered, in spite of its position on the Roanoke, from the competition of Norfolk and Petersburg and thus played a subsidiary role. The three larger ports grew also because of their functions as entrepôts for surrounding ports and their growing communications with New England, Europe, and the Caribbean. Charlestown became the preeminent city of the area by 1775 because of a powerful combination of circumstances. These included its balanced position with respect to the Indian, the coastal, and the piedmont agricultural trades, and also its military and administrative role as the main seat of colonial government in the southern colonies. The latter

Figure 25. The Georgia-Carolina transport network in 1800: rivers, canals, and major roads (sources: Map, Price and Strother, 1808; Map, Lewis, 1804).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CITY POPULATIONS
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IMPORTANT TOWNS HAVING LESS THAN 2500 POPULATION
IMPORTANT TOWNS IN ADJOINING STATES

factors particularly caused the colonial funds expended on internal improvements to be invested in its favor.

1770-1800

The years 1770-1800 showed a continuation of the trends of the previous period, with an extension of the pattern to the southwest (Fig. 25). During this period interior Georgia experienced the beginnings of a colonization process similar to that of the Carolinas between 1750 and 1770. More villages, which were to become important upland towns, appeared at important junctions of the Virginia trail (e.g. Spartanburg, Greenville, Lexington, and Concord). At the Fall Line Columbia, Cheraw, and Smithfield grew to claim their place as important members of the chain of head-of-navigation towns. Smithfield was hurt by the selection of Raleigh as North Carolina's state capital at the end of the century, while Columbia's fortunes were enhanced by its choice as the state capital of South Carolina. All of the Fall Line towns benefitted from the expansion of settlement on the piedmont, and roads were constructed from them as supplementary feeders to the river network. At the same time the traffic lines between the Fall Line towns and the rivermouth ports were strengthened by river and canal navigation schemes.

River valley penetration routes from the coast were important considerations in the location of trade villages

in the uplands. These villages arose particularly at road and river junctions and at fords (e.g. Athens and Petersburg, Georgia, and Wadesborough and Pittsborough, North Carolina). Frequently, as the population of the uplands increased, such points were, because of their accessibility, frequently selected as the seats of government of newly created counties. This increased their nodality in terms of the local road network, thus encouraging urban functions to locate in them. On the coast the urban structure showed little change over that of the Colonial Period.

Charleston continued to grow out of all proportion to the other ports, despite the fact that the South Carolina piedmont was not nearly so productive as the North Carolina piedmont at this date. The main reason for Charleston's advance was that she had effectively eliminated port competition in South Carolina during the Colonial Period. In North Carolina on the other hand, four ports continued to compete for the piedmont trade (Fig. 25). Also much of northeastern North Carolina's produce was hauled into Virginia to be marketed at either Petersburg or Norfolk. As a result, Charleston dominated routes from the South Carolina coast to Georgia and North Carolina, as well as routes to interior South Carolina. In North Carolina, Fayetteville and Wilmington, Smithfield and New Bern, Tarboro and Washington, and Halifax and Edenton tended to be most directly involved with each

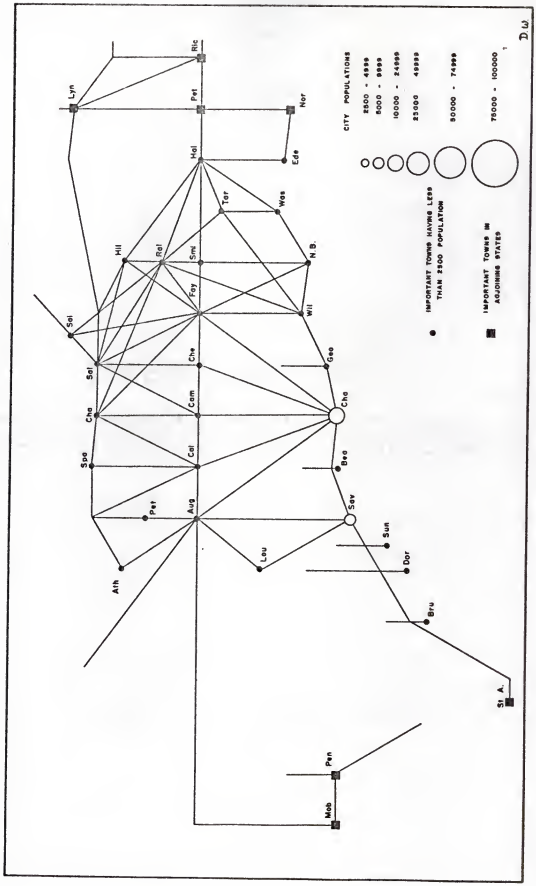
other. Savannah was in the process of establishing its hegemony in Georgia, but was limited by the small size of the state before 1800.

1800-1820

By 1820 the road-river communications system had reached its greatest development in Georgia and the Carolinas (Fig. 26). All of the territory, with the exception of western Georgia which was still in Indian hands, had been occupied and integrated in some measure into the regional transportation network. At the same time the distribution of towns in this network had assumed the distinct pattern towards which it had been tending since 1750.

Due to the influence of migrating settlers after 1775, the Old Virginia Trail road had been extended along the edge of the mountains to Athens in Georgia and from there across the Chattahoochee near present-day Columbus. A second through route was established, with the aid of the Federal government, to provide overland passage for the mails from Washington, D.C., to New Orleans. This route linked the Fall Line towns of North Carolina with a portion of a well-established migration route from the north between Camden and Augusta. From Augusta the old Indian trading path along the Fall Line to Alabama was widened and straightened for wagon traffic. This not only promoted

Figure 26. The Georgia-Carolina transport network in 1820: rivers, canals, and major roads (sources: Map, Sturges, 1818; Billington, 1967, 321).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a third major northeast-southwest route to join the older Virginia Trail and coast road but encouraged the establishment of Georgia's major Fall Line towns (Milledgeville, Macon, and Columbus). In the early part of the nineteenth century, however, all three main north-south routes carried more people than freight, particularly over long distances.

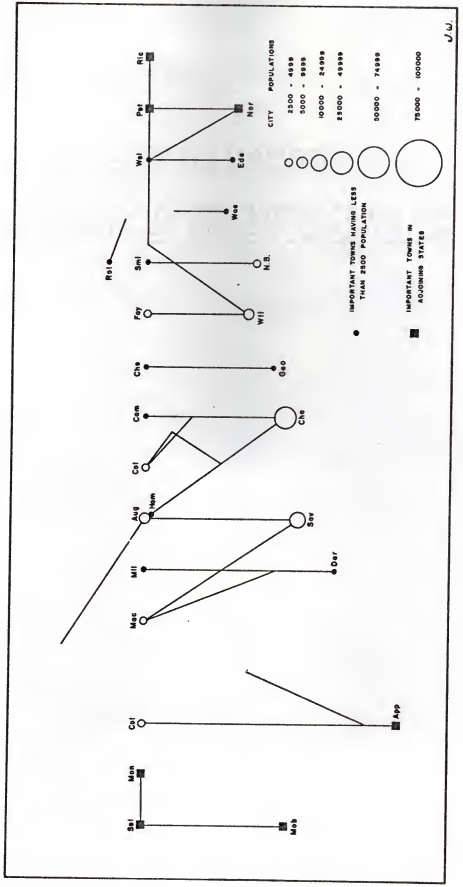
The most important traffic arteries continued to run from the piedmont to the rivermouths and from there, along the coast, and across the sea. State and city involvement in internal improvements had produced the first major attempts to consciously structure the route network between the coast and the mountains. In 1800 Charleston completed the Santee Canal, giving it more direct access to Columbia and Camden. Also, around the turn of the century, North Carolina built a road from New Bern to Tennessee, Savannah extended its Augusta road through the mountains to Tennessee, and Norfolk, by building the Dismal Swamp Canal, increased its control over the Roanoke River trade. During the 1820's South Carolina followed the example of Georgia and North Carolina by building a direct road from Charleston via Columbia to Asheville, North Carolina, where it connected with North Carolina's cross-state road to Tennessee.

By the 1820's, therefore, the Georgia-Carolina transport network had assumed a definite geometry. The grid consisted basically of three chief northeast-southwest

routes separated by the bulk of the piedmont, and by the coastal plain. Stretched across these routes, and frequently perpendicular to them, were a series of penetration lines which had been extended from the main coastal ports, through the Fall Line towns, to the mountains, and occasionally beyond. Communities located at the junctions of these major arteries gained maximum trade benefits and proceeded to grow at much faster rates than their immediate neighbors. Frequently they used their increased population and prosperity to influence political decisions concerning internal improvements in their favor. This further consolidated their position in the trade and traffic hierarchy.

By the 1820's also, cross connections were being made in the grid, as growing Fall Line cities sought to expand their sphere of influence. Augusta and Columbia for example, competed for territory in western South Carolina, as did Camden, Cheraw, and Fayetteville along the border between South and North Carolina. At the same time, towns on the mountain fringe were beginning to compete for the trans-Appalachian trade by promoting roads into the mountains. Along the coast the situation remained basically the same. All trade expansion with the interior was funneled to one of the four main ports -- Savannah, Charleston, Wilmington, and New Bern. Charleston maintained its overall dominance due to its control of trade routes, but New Bern was losing its colonial eminence in North Carolina

Figure 27. The Georgia-Carolina transport network in 1840: railroads and steamboat routes (sources: Map, McRae and Brazier, 1833; Map, Anon., 1832; Map, Anon., 1834).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to Wilmington, which lay closer to the productive piedmont sections. Darien was experiencing a boom as the outpost for the rapidly settling Ocmulgee and Oconee valleys, but the other small ports continued to languish. Without the political power necessary to influence transport investment, their hopes of advancement were poor.

1820-1840

Although the Georgia-Carolina transport network was by 1820 a fully integrated system (Fig. 27), it had two major deficiencies. One was that traffic moved slowly over the poor roads and sluggish rivers. The second was that the predominant transport techniques of the day -- the horse-drawn wagon and the pole boat -- were extremely expensive in terms of the ratio of labor costs to volume of goods transported. It was inevitable that, should an adequate means of reducing either of these costs become available, the towns of the region would adopt it as a tool of competition. In the 1820's and 1830's two such opportunities presented themselves.

The first of these technological advances in transportation was the steamboat, which vastly expanded the carrying capacity of the Georgia-Carolina rivers, and significantly reduced the time of transit, especially in the upstream direction. After 1820 the steamboat presence was felt on all the "navigable" rivers of the three states

(Fig. 10), bringing prosperity in proportion to the reliability of that navigation. On certain rivers, like the Chattahoochee, the Ocmulgee, the Savannah, the Santee-Congaree, the Cape Fear, and the Roanoke, navigation was possible to the Fall Line for virtually the whole year. Steamboats on these rivers were hindered only infrequently by shallow water. On other rivers such as the Flint, the Oconee, the Peedee, the Neuse, and the Tar, steamboat passage was uncertain for as much as half of every year.

The main consequence of the steamboat invasion, therefore, was the increased attraction for trade of the Fall Line centers on the most frequently navigable rivers. Just as the worst-equipped of the small coastal ports of the early eighteenth century had been retarded in their development, so the more limited of the Fall Line towns fell behind in the struggle for a trade hinterland. Tarboro, Smithfield, Cheraw, and Milledgeville were all hurt by their inability to fully utilize the steamboat (the latter despite its designation as the capital city of Georgia). On the lately settled Flint River no true "Fall Line" town emerged. Steamboats did run as far as the Fall Line on that river occasionally, but the major port of transhipment, open for year-round traffic, was Albany -- well to the south.

A second consequence of the steamboat was that it discouraged long-distance overland wagon transportation on the coastal plain in favor of river shipments. This

strengthened the traffic flow relationship between the towns on particular rivers. It also weakened the ability of neighboring ports to cut in on each other's traffic by building roads to tap the rivers in their higher reaches. Thus New Bern was helped at the expense of Wilmington, Darien at the expense of Savannah, and Savannah at the expense of Charleston. It was not long before a new tool was acquired to redress the situation.

Charleston, alarmed at Savannah's growing share of the lucrative Savannah river trade after 1820, determined to reestablish the advantages of overland connections to Augusta by making them more efficient and less costly. The means of doing this was the novel technique of the railroad. Initially railroads were conceived as trade feeders to the main river arteries, and as a method of tapping the trade hinterlands of other ports by intercepting their river traffic. Between 1830 and 1840, seven such railroads appeared in the Georgia-Carolina area.

Charleston built the first of these roads to Hamburg to obtain the trade of Augusta and the Savannah River valley. Savannah responded quickly by constructing a line across country to Macon. This was an attempt to stake a claim to the cotton traffic west of Augusta and thwart Charleston's ambitions of obtaining the trade of the Georgia piedmont. At the same time Charleston encouraged Athens to build a railroad west from Augusta to link the central piedmont to the Hamburg and Charleston road. This

began one of the major sustained intercity trade conflicts in the south before 1860.

With the Charleston and Hamburg an apparent success, Wilmington, Petersburg, and Norfolk all combatted each other for the Roanoke valley trade by building railroads to tap that river at the Fall Line. The Petersburg road was constructed first, generating a quick reaction from Norfolk. The roads of both cities jostled for locational advantages on the Roanoke. Petersburg won temporarily by construction of a short line from its initial route to Gaston above the Fall Line. Wilmington sought to obtain with its road the trade of the lower Tar and Neuse, as well as that of the Roanoke, where it was at a distinct disadvantage with respect to Norfolk and Petersburg.

Raleigh, upset at Wilmington's preference for Weldon as a terminal rather than Raleigh, also began construction on a road to Gaston, which would give it a better port and market connection at Petersburg. Columbia, inspired by the benefits of the Charleston and Hamburg to Hamburg, and incensed that a rival town had been so favored, demanded and received a branch to Charleston and Hamburg. This gave it faster connections to Charleston and improved its trading position with respect to Camden and Hamburg.

For the most part the early railroads were financed by city and private subscriptions, with the city providing the lion's share of the money. Because railroad construction was a costly enterprise, only the larger wealthy

cities could participate in it. Those cities capable of supplying the capital were the ones which directed the alignment of the roads and which benefitted most from railroad construction. Another stage had been reached, therefore, in the differentiation of the possessors and non-possessors of trade. With the coming of the railroads there appeared to be no hope that the small ports could increase their trade. At the same time the prosperity of the small towns of the interior seemed destined to be subject to the whims of the big-city railroad builders.

1840-1860

To some extent the financial dilemnas of the smaller cities, with respect to railroad building, were relieved during the period 1840-1860 by the intervention of the state legislatures. This was particularly the case in North Carolina where the state decided that it was in the best interests of the people for the government to build a railroad through the middle of the state. The projected line was to run from the Tennessee Line to Beaufort, the state's best deepwater harbor. This move had two major objectives. One was to cheapen the cost of transportation to the sea for large areas of the North Carolina piedmont. The second was to keep the traffic in North Carolina commodities in North Carolina during its journey to the sea. North Carolina's port interests constantly complained of losing traffic to the Virginia cities.

Due to "pork-barrel" political decision-making, the road was not aligned through the center of the state, as originally intended, but around it in a semicircle from New Bern to Charlotte. It provided, when completed, a solid penetration line between the coast and the mountain fringe, and traffic along it gave New Bern an unexpected lease on life. The road, however, ran through Raleigh and Goldsboro and consequently traffic continued to be lost, to Petersburg via the Raleigh and Gaston, and to Wilmington via the Wilmington and Weldon. The carefully established gauge differentials of the North Carolina railroad system, with respect to those of Virginia and South Carolina, were obstacles to the transfer of freight, but they could not counteract the advantages of the shorter distances to Virginia ports from large areas of the North Carolina piedmont. The one railroad built without substantial state aid in North Carolina, between 1840-1860, was the line from Wilmington to Manchester, South Carolina. This was an attempt by Wilmington businessmen to grab a share of Charleston's traditional trade hinterland in eastern South Carolina. The line was completed to Columbia.

The state of South Carolina took a more piecemeal approach in its support of railroad building. Most frequently private enterprise was encouraged to attempt construction. If these attempts failed, the state stepped in to assure completion. Because of this viewpoint the

evolution of the South Carolina railroad network between 1840 and 1860 was somewhat different from that in North Carolina. Instead of a single planned trunk line running from the coast to connect all the important mountain fringe towns, the crooked stem of the South Carolina Railroad was used as the base for any lines which were able to raise the money to build to it. The result was a set of lines converging on Columbia from the towns of the mountain fringe, each having short connectors to important piedmont villages. This construction confirmed the position of Columbia as the outstanding Fall Line mart of the state and concentrated the trade of the piedmont even further at Charleston, enabling that city to maintain its lead as the largest town of the region. The trading position of Charleston was challenged by both Wilmington and Savannah, but Charleston struggled to defend its territory. It countered the thrust of the Wilmington and Manchester by building the Northeastern Railroad to intersect that line at Florence, and by persuading Cheraw to build a line to Florence to connect with the Northeastern. This brought Cheraw back into the Charleston orbit. Charleston made a less successful attempt to attract trade from the Savannah River and southwest Georgia by building the Charleston and Savannah Railroad. Little traffic was diverted by this move.

In Georgia the attitude of the state to railroad-building between 1840-1860 was different to both of its

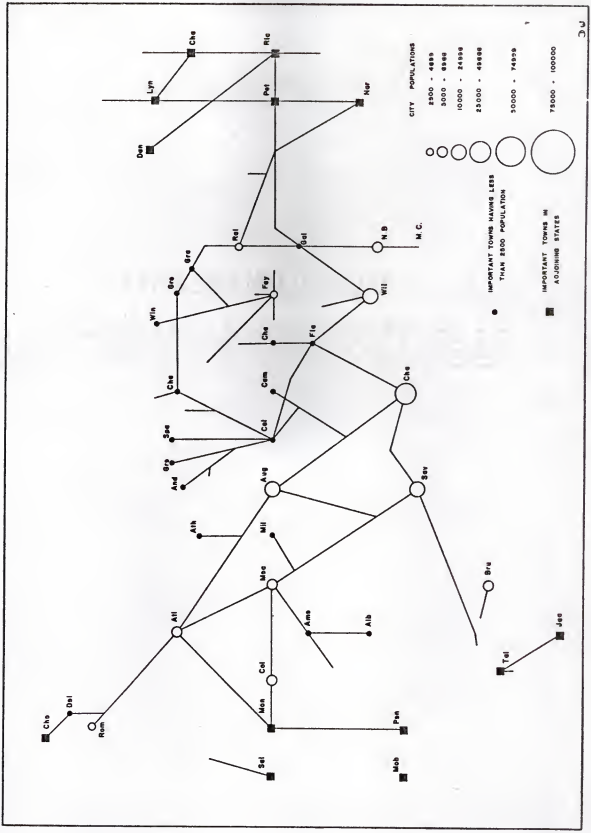
Carolina neighbors. The Georgia legislature insisted that the railroads of the state be built by private enterprise. The overriding consideration in railroad-building, therefore, became cheap construction. Normally roads were built over the shortest distance available to connect them with the state's two early established trunk roads -- the Central of Georgia and the Georgia Railroad. The result, though for entirely different reasons, was a circuitous route to the coast from western Georgia and Alabama similar to that in North Carolina.

The state's one great exception to its non-intervention policy was its construction and operation of the Western and Atlantic Railroad. Realizing that there was no hope of raising local capital in the remote and poorly settled area of northwest Georgia, and recognizing the tremendous advantage to the central and southern parts of the state of access to the food supplies of the Midwest, the state resolved to build a rail connector from the Georgia piedmont to Chattanooga. The railroad was to link lines from the Midwest, converging at Chattanooga, to the lines already established within Georgia. The connecting point of the roads in Georgia, selected as the most favorable point for all lines to extend to, developed eventually into Atlanta. By judicious investment policies, therefore, the state of Georgia had achieved a deeper penetration of the interior than either North or South Carolina without compromising the territorial extension of railroads within the state.

An interesting response to the challenges of trade competition occurred between 1840 and 1860. Fayetteville, neglected by the state railroad system, decided to promote a cheaper form of transport improvement. This was the plank road which provided a hard-surface all-weather route. Several of these roads were constructed out of Fayetteville in the 1840's and 1850's (Fig. 12), including one long road to Lexington and Salem. These enabled Fayetteville to maintain its hold on piedmont traffic until the post-Civil War trunk lines came to the town's aid.

The main objective of both railroads and plank roads before 1860 was to secure control over a particular trade territory and to exclude competition. Investment in new construction was the main tool for extending the influence of ports and cities. Political manipulation was the main tool for preserving territorial integrity and trade monopoly. As a result, in 1860, the railroad network of Georgia and the Carolinas was comprised of a series of substantial, but relatively discrete, short-trunk railroad systems controlled largely by the major ports of the respective states (Fig. 28). These systems were supported by the profits of transporting the produce of areas in the state served by the system to the coastal ports.

Figure 28. The Georgia-Carolina transport network in 1860: railroads and plank roads (sources: Taylor and Neu, 1956, Map III; Map, Anon., 1860; Map, Nicolson and Lindenkohl, 1865).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1860-1880

After the Civil War financial difficulties forced railroads to reconsider their prewar policies and to try to increase their receipts by acquiring larger traffic flows. There was no hope of quickly increasing local shipments and the solution was seen to lie in providing larger amounts of through traffic. The companies were unable to abandon quickly the old territorial strategy of the prewar period because they were tied to it in so many ways. They did, however, try to modify the old concept by developing a new idea of enlarged territories suitable for controlling through lines, yet capable of being sealed off from encroaching rivals. Three previously mentioned techniques of cooperation, construction, and consolidation were used to implement the new objectives.

Cooperation assumed many forms, the simplest being agreements with connecting lines to promote through traffic at common rates. Sometimes the alliance sought to provide the road with entry into a previously untapped area, but more often it aimed at uniting several companies into a competitive through line. Later the desire to provide a more defensible territory caused several companies to ally against invading lines and competing routes. When Reconstruction politics helped to spur the building of new lines, frequently without concern for traffic potentials, the older railroad companies realized that cooperation alone was a weak method of territorial preservation.

Alliances could easily be broken if better opportunities arose. The opening of a new and "invading" line tended to alter existing spatial relationships dramatically, and to cause a shifting of alliances, either operational or financial. The consequences in terms of loss or gain were frequently great. The loss or inaccessibility to a company of a vital connector caused a serious diversion of business and frequently financial collapse. The president of the Macon and Brunswick, giving reasons for the receivership of his railroad in 1873, said,

> The entire failure of our road is due to our having been blocked at Macon. The road never could have been built had it been supposed possible that lines north of that point could have been closed so effectively as has been done by the leases and amalgamations of these outlets northward (Quoted in Klein, 1968, 1058).

Fearing isolation and bankruptcy, companies began to seek connections of a more permanent kind. Construction and consolidation increasingly became methods of achieving survival. Traditionally expansion had taken the form of small feeder lines to develop local resources. In the years between 1860 and 1880 expansion became a process of the building or acquisition of large roads to ensure through connections.

The Louisville and Nashville, which had survived the war in better shape than most Southeastern roads, built south into Alabama and east to link with the East Tennessee, and acquired connecting roads to Memphis (Tilford, 1951,

12-14). The Richmond and Danville, aided by the Pennsylvania Railroad, constructed a line along the upper piedmont into Atlanta, and joined it to smaller acquisitions to form the piedmont Air Line (Stover, 1955, 233-253). The East Tennessee Virginia and Georgia, itself the product of a consolidation in 1869, gained control of the Memphis and Charleston and secured outlets to the south via the Selma Rome and Dalton. To guarantee a through line the East Tennessee also formed an alliance with the Atlantic Mississippi and Ohio, which connected with the East Tennessee at Bristol. This gave it a port outlet at Norfolk, Virginia (Daggett, 1908, 147-151). The Central of Georgia, in 1873, leased the Southwestern Railroad, absorbed its connector to Atlanta, acquired a fleet of Savannah-based steamers, and purchased substantial interests in several smaller lines (Klein, 1970, 73-85).

Although this territorial expansion was defensive in conception, it was inevitably aggressive in operation. It brought previously uninvolved companies into direct confrontation, each viewing the other as a hostile invader. Territorial boundaries, which had appeared relatively distinct, became diffuse zones of conflict as rival companies sought to share each other's trade bases. The result became, not the sought-after protection, but increased competition at more places and on a larger scale. This reduced both earnings and profits. Many companies overextended themselves financially and foreclosed. Solvent

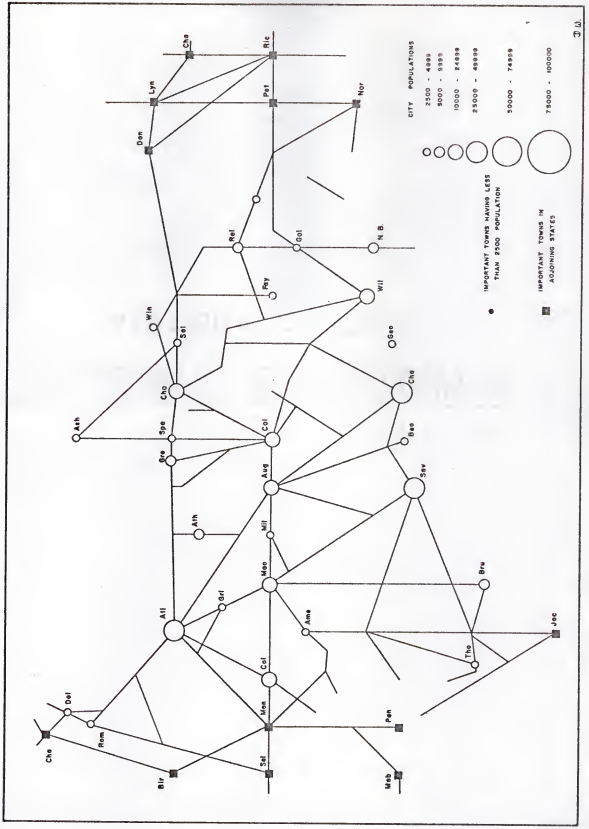
companies, though weak financially, could not resist buying foreclosed roads in order to prevent rivals from doing so. Consolidation became a juggernaut by the 1870's, and in the process the prewar territorial concept was completely dethroned (Joubert, 1949, 1-30).

The main result of the construction and consolidation of the 1870's to the Georgia-Carolina railroad network was partial reorientation of the major trade flows (Fig. 29). The traditional intrastate movements from the mountains and the piedmont to the coast were largely replaced by movements along the piedmont or the coastal plain to the cities of the Northeast. The developments facilitating this move were the construction of short connecting roads, the merging of older companies along the mountain fringe and along the Fall Line, and the cooperative association of previously independent and fiercely competitive lines along the coast. By 1880 all the port cities except Savannah had lost control of the railroad systems they established.

1880-1900

Unable to assure trade area protection, and with command of much longer lines than before the war, the railroad companies after 1880 began to seek trade successes through competition. This change in thinking was a logical alternative to the territorial concept. If a monopolistic territory could not be protected from invasion, the best

Figure 29. The Georgia-Carolina railroad network in 1880 (sources: Coulter, 1947, between pages 236-237; Stover, 1955, 192; Map, Anon., 1879; Map, Kerr and Cain, 1882).


CITY POPULATIONS
2500 - 4999
5000 - 9999
10000 - 24999
25000 - 49999
50000 - 74999
75000 - 100000
IMPORTANT TOWNS HAVING LESS THAN 2500 POPULATION
IMPORTANT TOWNS IN ADJOINING STATES
Cha
Ric
Lyn
Pet
Nor
Don
Rel
Gal
N.B.
Fay
Wil
Win
Sal
Geo
Cha
Cha
Ash
Spe
Col
Bea
Bre
Aug
Sav
Ath
Mil
Mon
Bru
Gri
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hope of survival appeared to be an expansion of outlets for both through and local traffic. The large companies, resulting from the receiverships of the 1870's provided the impetus for the development of such interterritorial systems. The major concerns increased their mileage with great speed. The Louisville and Nashville jumped from 966 miles in 1878, to 3,231 in 1883; the Richmond and Danville from 448 to 2,503; the East Tennessee from 272 to 1,389; and the Central of Georgia from 861 to 1,754. By 1881 six companies dominated the traffic of Georgia and the Carolinas. The companies were the Richmond and Danville; the Savannah Florida and Western (nucleus of the Plant system); the East Tennessee Virginia and Georgia; the Norfolk and Western; the Louisville and Nashville; and the Central of Georgia.

The interterritorial expansion of these roads resulted in another round of consolidation at a higher level. The Louisville and Nashville absorbed the Nashville and Chattanooga in 1880 in a mutual struggle. The following year it took, with the Central of Georgia, a joint lease of the Georgia Railroad (thereby removing a powerful and long-established competitor of the Central) (Tilford, 1951, 15). Between 1886 and 1889 the Richmond Terminal Company gained control of three major systems: the Richmond and Danville, the East Tennessee Virginia and Georgia, and the Central of Georgia (Woodward, 1951, 121). This move pushed the railroad company associations, known as

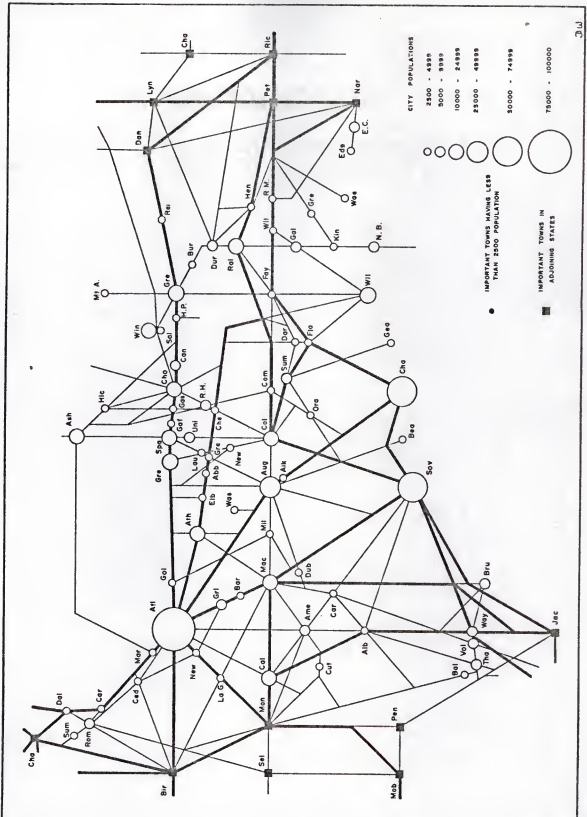
the Seaboard Air Line and the Atlantic Coast Line, into single corporations for greater efficiency of operation, and greater resistance to competition.

The desire of companies to penetrate new trade territories fostered fresh construction as well as consolidation. New lines were built for three reasons: to open new territories or reach new markets, to form new through connections with other systems, or to parallel a rival line enjoying a trade monopoly. Among companies undertaking such moves were 1) the Norfolk and Western which built a new line to the Ohio River, completed the Shenandoah Valley Railroad as a rival to the Richmond and Danville's Virginia Midland, and also completed branch lines into the Richmond and Danville's territory at Winston-Salem and Durham, North Carolina (Smith, 1949), 2) the East Tennessee Virginia and Georgia which, in 1882, finished a line from Rome to Macon, Georgia, paralleling the Western and Atlantic Railroad, and the Central of Georgia's road between Macon and Atlanta (Klein, 1920, 123), 3) the Richmond and Danville, which, in 1889, completed the 366-mile Georgia Pacific from Atlanta to Greenville, South Carolina, giving it a direct line from Richmond to the Mississippi, and 4) the competing Plant and Central Florida systems, which cut short routes in south Georgia between Jacksonville, Florida, and Savannah (Map, Anon., 1896).

Between 1880 and 1900 the shifts in emphasis of traffic flow noted in the preceding period had been largely completed. The function of the three major rail routes of the area -- the Southern, the Seaboard, and the Atlantic Coast Line -- was to carry goods parallel to the coast line, rather than perpendicular to it, as had been the case in the past. For the most part these transportation routes were aligned to connect with the industrial areas of the Northeast. The coast port benefiting most from this trend was Norfolk, Virginia. As the main terminal of both the Norfolk and Western and the Seaboard Air Line, and with the best deep-water port on the Atlantic coast south of Baltimore, Norfolk was able to achieve a position in the urban hierarchy denied it in the early years by Petersburg and Richmond. Savannah benefited most in the three-state area by being served by the Central of Georgia, as well as the main lines of the Seaboard and Atlantic Coast Line. Charleston and Wilmington and the lesser ports suffered through being by-passed by the major trunk lines, and by losing control over their feeder lines.

At the Fall Line and in the piedmont, by contrast, the new through routes to the Northeast encouraged the growth of a multitude of small market and industrial centers at points along their lines (Fig. 30). This process was particularly noticeable along the Southern line from Durham via Charlotte to Atlanta, along the Seaboard line from Weldon to Atlanta, and along the Atlantic Coast Line

Figure 30. The Georgia-Carolina railroad network in 1900 (sources: Map, Anon., 1896; Doster, 1957, 249-252; Stover, 1955, 264).


CITY POPULATIONS
2500 - 4999
5000 - 9999
10000 - 24999
25000 - 49999
50000 - 74999
75000 - 100000
IMPORTANT TOWNS HAVING LESS THAN 2500 POPULATION
IMPORTANT TOWNS IN ADJOINING STATES
Cha
Ric
Lyn
Pet
Nar
Dan
E.C.
Ede
Wes
Hen
R.M.
Gre
Rei
Wil
Gal
Kin
N.B.
Bur
Dur
Rol
Fay
Mt A.
Gre
Wil
H.P.
Win
Sal
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Ora
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from Weldon to Columbia. The significance of railroad locations to urban growth in this period is indicated by the fact that by 1900 no center of over 2,500 population was without a railroad connection, and the vast majority of the smaller communities only reached that total after the railroad arrived (Tables 1, 2, and 3). Many of the new towns, particularly on the upper piedmont, were new textile, furniture, and tobacco manufacturers, whose industrial locations had been directly influenced by the trunk line facilities.

The major through- or long-haul routes in 1900 are indicated in Figure 30 by thicker lines. For the most part these thick lines also indicate the major urbanizing areas of the three states. The main traffic streams, by 1900, were becoming self-perpetuating by attracting producers to locate in their emerging urban corridors. Before 1860 it was the cities which generated and aligned the railroad lines to serve their business interests. By 1900 the wheel had come full circle and new urban growth was being generated and aligned by the railroads, thus fostering their money-making goals.

Conclusion

In perspective the transport expansion sequence of Georgia and the Carolinas between 1670 and 1900 appears to separate into four phases. The first phase is that of

coastal colonization. This phase opened with the first permanent settlement of Charlestown and continued to the beginning of settlement in the Back Country of North Carolina around 1750. The penetration of the Back Country by settlers ushered in a new era in which a communications system was established to carry products between the interior and ports and markets on the coast. During this period, from 1750 to 1830, a comprehensive and fully integrated road-river transport network was developed with a limited number of cities at major junctions.

As population increased so did trade competition between the various urban centers. The wealthier towns were able to afford expensive new facilities for attracting trade. After 1830 a third phase of transport development began with the construction of the railroads. Between 1830 and 1870 the main aim of railroad construction was to feed relatively local traffic into the major interior trading centers at the Fall Line and into the main coastal ports. Attempts to establish long through routes for interregional trade were not generally a success. In fact considerable energy was expended by various business interests in the three states to prevent an integrated rail network where long hauls were possible.

The depredations of the Civil War and the depressed postwar economy of the Southeast weakened the financial abilities of the cities and their railroads. These changed economic conditions forced railroad companies to reconsider

the purposes of their operations, and in doing so they generated a fourth phase in the evolutionary process. This period, from around 1870 to 1900, saw a rapid merging of the traditional short railroad lines into a small number of long-distance trunk lines. These trunk lines served huge territories by means of branches from the main stem. They also were more concerned with interregional traffic than with intrastate trade, as had been the case before the war. During the fourth phase the urban network began to exhibit linear arrangements corresponding closely to the location of the major trunk lines.

CHAPTER 7

CONCLUSION: THE TYPICAL TRANSPORT EXPANSION SEQUENCE IN DEVELOPING TERRITORIES -- AN INTERNATIONAL COMPARISON

Introduction

The preceding five chapters have explored in some detail the relationship between the general rate of territorial expansion of the population in Georgia and the Carolinas, the locational dimensions of that growth, and the evolution of the transport network. It is quite clear from the evidence that, while such relationships are both spatially and temporally complicated, broad regularities of pattern and process do exist. The three strings of major cities -- at the coast line, the Fall Line, and the mountain line -- and their successive periods of dominance provide one example. The realignment of traffic flows from lines perpendicular to the coast to lines parallel to the coast, and the shift from short-haul traffic to long-haul traffic on the railroads are others.

These regularities have already been noted and would seem not to need further elaboration. What does demand

attention, however, is the question of how closely the patterns of transport expansion in Georgia and the Carolinas resemble those exposed in other areas. International comparisons seem useful because they contribute to an assessment of the universal validity of geographic theory pertaining to transport expansion. By corollary they also provide some insight as to the degree of uniqueness bred into the transport growth sequence by local and regional conditions.

Several attempts have been made to place the observed sequence of transport network changes in a specific region into some kind of discrete stage model. The majority of these efforts have stemmed from a "general" model proposed by Taaffe, Morrill, and Gould (1963) (see Chapter 1). This model was derived from case studies in several "developing" areas, but particularly in West Africa. Like all stage models the Taaffe model partitioned what was essentially a continuous process into separate segments. This phase separation was justified by reference to the relatively discrete nature of transport investments.

According to Taaffe, Morrill, and Gould:

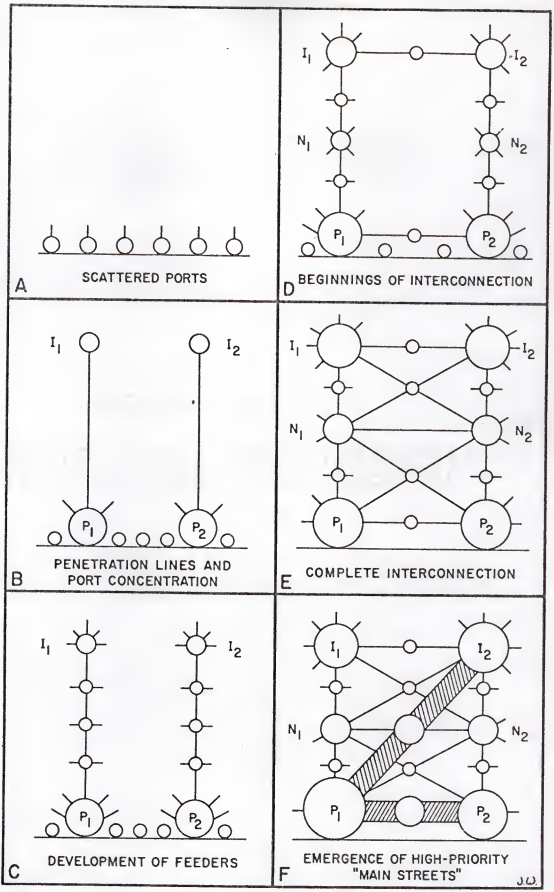
> The first phase [of a regional transport network] consists of a scattering of small ports and trading posts along a sea-coast [Fig. 31, A]. There is little lateral interconnection except for small indigenous fishing craft and irregularly scheduled trading vessels, and each port has an extremely limited hinterland. With the emergence of major lines of penetration [Fig. 31, B], hinterland transportation costs are reduced for certain ports. Markets expand

both at the port and at the interior center. Port concentration then begins, as illustrated by the circles P_1 and P_2. Feeder routes begin to focus on the major ports and interior centers [Fig. 31, C]. These feeder routes give rise to a sort of hinterland piracy that permits the major port to enlarge its hinterland at the expense of adjacent smaller ports. Small nodes begin to develop along the main lines of penetration, and as feeder development continues [Fig. 31, D], certain of the nodes exemplified by N_1 and N_2, become focal points for feeder networks of their own. Interior concentration then begins, and N_1 and N_2 pirate the hinterlands of the smaller nodes on each side. As the feeder networks continue to develop around the ports, interior centers, and main on-line nodes, certain of the larger feeders begin to link up [Fig. 31, E]. Lateral interconnection should theoretically continue until all the ports, interior centers, and main nodes are linked. It is postulated that once this level is reached, or even before, the next phase consists of the development of national trunk-line routes or "main streets" [Fig. 31, F]. In a sense, this is the process of concentration repeated, but at a higher level. Since certain centers will grow at the expense of the others, the result will be a set of high-priority linkages among the largest. For example, in the diagram the best rail schedules, the widest paved roads, and the densest air traffic would be over the P_1-I_2 and P_1-P_2 routes (Taaffe, Morrill, and Gould, 1963, 503-505).

Phase 1

The first phase of the Taaffe model, although fairly close in correspondence to the initial phase of the Georgia-Carolina sequence, is not a precise replica of the phase discussed in detail in Chapter 2 and portrayed graphically in Figure 24. In Georgia and the Carolinas, although there was a "scattering of small ports" in the

Figure 31. Stages in the development of a transportation network according to Taaffe, Morrill, and Gould (reproduced with permission from Taaffe et al., 1963, 503).


A
SCATTERED PORTS
B
PENETRATION LINES AND PORT CONCENTRATION
C
DEVELOPMENT OF FEEDERS
D
BEGINNINGS OF INTERCONNECTION
E
COMPLETE INTERCONNECTION
F
EMERGENCE OF HIGH-PRIORITY "MAIN STREETS"
I1
I2
N1
N2
P1
P2

early years, the ports did not approximate each other in importance as suggested in the Taaffe model. Charlestown, the first permanent settlement, quickly assured its dominance by penetrating the interior and establishing a control on trade which the later developing ports were unable to match.

Charlestown had, from the beginning, several deep penetration routes to the interior as well as the most frequent direct connections from the region to Europe and the Caribbean. These connections did not emerge slowly during the colonization process, as envisioned in the Taaffe model, but during the earliest days of settlement. The neglect of important maritime influences on coastal developments by the Taaffe model has been noted by other workers both in the United States (Pred, 1966, 190) and in New Zealand (Rimmer, 1967, 88).

Charlestown's dominance resulted largely from its role as the imperial administrative center during the early days of colonization. This not only encouraged the growth of overland routes focusing on Charlestown but made it, in effect, the imperial gateway to the southern colonies. In-coming settlers were funneled through Charlestown on their way to pioneer early frontiers. The Taaffe model, which is based partly on evidence from Ghana, suggests that port distinctions were not common in West Africa during the early period. Dickson, however, in a detailed study of port evolution in Ghana between 1800 and

and 1920, states clearly that in the initial period of colonization,

> The importance of ports was more affected by a complex of political and other factors [than physical factors]. A port automatically became more important than its neighbors if it was made the seat of Colonial Administration; the fortunes of such ports varied with the fortunes of the colonial powers that controlled them (Dickson, 1965, 99).

Burghardt, in his study of the Niagara Peninsula, also found early urban prominence to be related to administrative roles. He accused the Taaffe model of not giving sufficient weight to administrative considerations "for which reason a major diagonal road was established very early in the Niagara Peninsula," and went on to say that

> Some measure of administration is required from the very first days of political organization so that the administrative dominance of one place is often assured before any other place can rise to a position of commercial dominance (Burghardt, 1969, 439).

Although Taaffe and associates explain that one of the primary aims of European colonization was the acquisition of commodities, they propose in their model only weakly developed penetration lines to the interior during the initial occupation phase. According to them, only "networks of circuitous bush trails connected the small [coast] centers to their restricted hinterlands." (Taaffe, Morrill, and Gould, 1963, 506.) In Georgia and the Carolinas by contrast, the hinterlands of the major ports (Savannah, Charlestown, and Richmond) were extensive, and, in an absolute sense, the trails used for the fur trade

were long and direct rather than circuitous. Burghardt found that

> The major lines of penetration in the Niagara Peninsula must be placed in Phase One rather than in Phase Two because the major lines (e.g. Iroquois Trail) pre-existed and helped channel the penetration (Burghardt, 1969, 439).

Taaffe's concept of a lack of penetration lines may have been due to the nature of the trade carried on in the West African colonial situations. According to Ogunduna (1972, 113), the prime commodity traded in Nigeria before 1800 was slaves. These were usually plentifully available in the aboriginal coast ports. As a result there was no incentive for interior trade. After 1800 political disturbances in Nigeria made it unsafe for traders to move far inland, again discouraging interior penetration. Although this limited-penetration situation may have prevailed in West Africa, the question is whether it applied generally in other places. On the basis of the limited study available in North America it appears not to be a typical case.

It seems necessary to emphasize the potential significance of nontopographic factors in port growth during the initial period. Traditionally the distribution and development of ports along coastlines has been explained largely by reason of their waterway facilities, physical barriers, and site qualities (depth of harbor, protection from wind and sea, etc.) (Semple and Jones, 1933, 121-140). It may

well be that some early transportation patterns were dictated by the presence of superior locations on Chesapeake Bay (e.g. Norfolk and Petersburg) or the Savannah River, that Charlestown suffered from the absence of a river connection with the piedmont, and that sand bar hazards effectively killed the commercial aspirations of New Bern, North Carolina, and Georgetown, South Carolina.

It is certainly true that Charlestown, in spite of its poor physical location, became by far the largest port on the Georgia-Carolina coast during the period. It is also true that the port city of Norfolk,

> possessor of a true harbor near the gateway to Chesapeake Bay, blessed with an enviable central position for the coasting trade, master of the James-Kanawha river route to the interior, endowed totally, in the opinion of some, with "advantages second only to those of New York" (Albion, 1939, 375),

did not prosper until the latter half of the nineteenth century. Beaufort, North Carolina, and Brunswick, Georgia, were other excellent harbors which experienced little development during the study period.

A further element of Phase 1 in Georgia and the Carolinas, not present in the Taaffe model, was the quick appearance of a lateral connection for the coast cities. This was a military-administrative project of the colonial administration which provided an alternative to the normally preferred coastal sea route. Burghardt also found a coastal connector in the Niagara Peninsula. There the road was of more trade consequence than in the Carolinas, but

Burghardt presumed that

> Even if the portage function had not been present, such a road would probably have been constructed to join up the entry points since these were the first urban centers (Burghardt, 1969, 439).

One reason for this difference between the West African and North American cases may be that in the early period of colonization in Africa, European settlement was infrequent and ports remained largely under aboriginal and tribal domination (Dickson, 1965, 99-107; Ogundana, 1972, 111-115). In North America, where European settlement was common from the beginning, and where one country controlled long stretches of coastline, the early development of interurban roads was more likely.

Phase 2

According to Taaffe, Morrill, and Gould, Phase 2 consisted basically of the establishment of port penetration lines and the beginning of port competition through hinterland piracy. In general the second phase of the Georgia-Carolina sequence is also characterized by such events. Although, as shown above, penetration lines had developed in Phase 1 in Georgia and the Carolinas, they multiplied and extended during Phase 2. To a large extent the penetration lines were projected inland by the most aggressive ports anxious to obtain more trade. The lines were actively encouraged and promoted, particularly in the

Carolinas, by the emerging interior villages desirous of shorter connections to the coast. Generally these penetration lines took two forms. One was a combination of road and river between the seaport and the interior agricultural villages. The second was that of the wagon road, used largely for the migration of new settlers coming into the region from the north.

Although the Taaffe model recognizes the first type of penetration lines roughly perpendicular to the coast, it completely neglects the possibility of the second type. The aim of such roads was less to tap the wealth of the interior than to gain passage through it. Because both capital and technology for road engineering were limited in the early years, penetration routes tended to seek the least demanding physical alignment. For the routes from the coast this was generally via a river to the head of navigation, and from there by road, either along the valley or an adjacent interfluve, to the edge of the mountains. Penetration lines parallel to the coast faced greater obstacles in the series of rivers perpendicular to them.

In Georgia and the Carolinas there were two basic solutions to this problem. One was a major penetration route running along the mountain fringe and crossing the streams in their upper reaches where streams were narrower and shallower. It had been established during Phase 1 by the Virginia fur traders. During Phase 2 it was adopted and extended by incoming migrants from the northeast all

the way to Georgia. The second penetration route parallel to the coast utilized the Fall Line shallows as a means of crossing the major rivers in their middle reaches. The tendency for parallel routes as well as perpendicular routes to develop in colonial situations has been noted in different parts of Ontario by both Burghardt (1969, 439) and Whebell (1969, 4).

As predicted by the Taaffe model, a number of "on-line" nodes emerged along the major penetration routes in Phase 2 in Georgia and the Carolinas, as they had begun to do in Phase 1. The preferred places for the appearance of important towns were the intersections of the two sets of penetration lines. This was particularly noticeable along the mountain fringe where county seats were located at the junction of roads from the coast with the Old Virginia Trail. Towns at the Fall Line had already begun to emerge at break-of-bulk points on the rivers, but their positions were strengthened by the traffic which passed through them along the Fall Line road.

The pattern of urban location, therefore, during Phase 2 greatly reflected the narrow, relatively straight, and rectangular linearity of the major penetration lines. As such it provides some basic conditions for one of the main variations of the central place theory proposed by Christaller. Primarily concerned with a rational explanation of hierarchies and distances, Christaller regarded his "market principle" as paramount, but he established al-

ternatives to this system, including a "traffic" principle. According to Christaller,

> The traffic principle states that the distribution of central places is most favorable when as many important places as possible lie on one traffic route between two important towns, the route being established as straightly and as cheaply as possible (Christaller, 1966, 74).

Although adequate testing has not been undertaken, the linear arrangement of service centers indicates that perhaps a central place hierarchy based on Christaller's traffic principle began to emerge in Georgia and the Carolinas during this second phase.

The production of penetration routes in Georgia and the Carolinas occurred at the same time that population was spreading out and increasing in density. One result was that feeder lines were established to connect all areas of the three states with the penetration lines. By the end of the phase the road transport network was fully interconnected. Such interconnection does not occur, according to Taaffe, Morrill, and Gould, until the third phase of the transport expansion sequence. One result of this interconnection, and virtually universal accessibility, was an increased potential for hinterland piracy, but this was not actualized during the period due to the excessive costs of wagon freightage. Although Charleston managed to maintain its initial lead in port development, it was not able to increase its advantages vis-à-vis Wilmington and Savannah because of the shorter distances

and good river connections between those ports and the North Carolina and Georgia uplands respectively. In fact during this second period, both Savannah and Wilmington continued to erode Charleston's territorial position due to their acquisition of better access routes to the interior. The smaller isolated ports, generally made little progress, except for Sunbury which enjoyed a brief boom during early attempts to settle the Georgia coastal plain.

Overall the pattern of port development in Georgia and the Carolinas, in Phase 2, followed that suggested by Taaffe, Morrill, and Gould in terms both of port penetration lines and port concentration. Similar characteristics have been confirmed by Rimmer in Australia and New Zealand, by Dickson in Ghana, by Stanley in Liberia, and by Pred in the Middle Atlantic States. Pred summarized the general process saying that

> each increment in the nodality of a center at the coastal terminus of a penetration line encourages expansion of its wholesale trading complex, soon elicits an initial multiplier, fulfillment of thresholds in other sectors of the economy, real estate speculation and construction, and still greater inducements to investment in wholesale-trading activities, the result of which is population growth at the expense of non-terminus ports (Pred, 1966, 190).

Bird, in his Australian study, citing Rimmer's Australia work, warned against too great an emphasis on the role of penetration routes in port concentration:

> The reason why Rimmer's concept [of port development] leads in a rather uni-directional fashion towards concentration is the over-

> reliance of his concept on the development of inland routes as the determinants of port success. There are indeed two other factors: the ability of the port to attract ships, notably through the presence of some local magnet within the port area itself, such as the provision of a new installation, or the establishment of a local industry with the necessity of tidewater access for raw material supply; or, secondly, the presence of an accessible raw material or fuel source (Bird, 1968, 231).

This criticism appears to be an extension of the criticisms of Pred and Burghardt already presented.

Phase 3

In the Taaffe model Phase 3 consists of a period of lateral interconnection as feeder lines diverge from the ports and penetration lines. For the most part this process had been completed in Georgia and the Carolinas in Phase 2. Phase 3, in the Georgia-Carolina area, was characterized rather by technological innovations such as the steamboat and the railroad, which tended to strengthen at first the prevailing pattern of penetration lines and node feeders. These innovations can be viewed, therefore, as a continuing part of the process of territorial competition, characteristic of Phase 2, but carried on at a higher level in terms of capital investments.

Taaffe, Morrill, and Gould suggest that the railroad innovation is an indicator of the emergence of high-priority routes and most commonly found in Phase 4. This

was certainly not the case in Georgia and the Carolinas where the railroad network seems roughly to have passed through the same two stages as the road system before developing its "main streets." The earliest rail lines in Georgia and the Carolinas were local feeder lines, or less frequently intrastate penetration routes. Only later did a pattern of clearly defined trunk systems with major vertices become obvious. Such a reversion to an earlier stage was suggested in a slightly different context by Taaffe, Morrill, and Gould: "A transport innovation or a sudden demand for a new penetration line . . . could reactivate the process." (Taaffe, Morrill, and Gould, 1965, 528, footnote 3.) It appears that a fully developed model of the development of a transportation network must take into account this reversion which has been noted elsewhere (Burghardt, 1969, 440).

One of the most significant aspects of transport expansion during Phase 3 in Georgia and the Carolinas was the influence of political decisions, again an element missing from the Taaffe model. Each of the three states developed a different approach to railroad building which was directly reflected in the pattern of construction and interconnection of the systems. North Carolina adopted, in effect, a state plan for railroads with the deliberate aim of developing a system which would most economically serve the commercial interests of the state, and which, at the same time, would be protected from linkages with

competitors outside the state. The result was a low cost intrastate trunk-route connecting all of the state's main towns (except Fayetteville) by a single line. The adoption of a different gauge from that prevailing in other states ensured, for a time at least, a discouragement to the flow of traffic from the North Carolina railroads to those of adjacent states.

In South Carolina there was no equivalent attempt by the state to sponsor and plan the state railroad system. Private enterprise was encouraged to invest in railroad construction. At the same time the state usually showed itself extremely willing to contribute to railroad companies which were having difficulty raising subscriptions. In consequence a larger number of lines in South Carolina were built without any apparent regard for the economies of short-line construction. More regard was given to obtaining direct connections to the ultimate goal of the Fall Line or coastal ports, than for the less costly but slightly more indirect stem-line branches.

In Georgia state political attitudes produced yet another variation. Unlike South Carolina, Georgia proved far from willing to invest state monies in railroads. As a result most roads were built with private subscriptions and construction costs became a more critical factor than was generally the case in South Carolina. The system which evolved in Georgia was closer to the pattern emerging in North Carolina, with the exception that there were two

main and competing stems -- one connecting to Savannah and one to Augusta. From these stems, short feeders branched to towns lying off the main route.

In spite of its general policy, the state of Georgia did build and operate a major penetration railroad. The line joined states to the northwest of Georgia with the expanding regional rail system, giving that system entry-exit connections both at the coastline and beyond the mountains. At the same time it increased traffic at the junction point which was to become the metropolis of Atlanta and at the ports of Savannah and Charleston. Both North and South Carolina had encouraged similar roads to that of Georgia, but neither had been willing to provide total capital. Thus this one political decision by Georgia probably had a greater over-all effect on the long-term pattern of urban and transportation development in the three states than any other in the history of that development, except for the initial locating of Charlestown.

The importance to transport networks of the political realities at the time of their construction has been emphasized by Meinig (1962) in his examination of the historical geography of two rail nets -- one a wholly state-directed enterprise in South Australia, and the other built and operated by several private companies in the northwest United States. They were chosen for comparative study because they were built and developed at roughly the same time, were both wheat-growing regions, and were both de-

signed largely to move export grain from the farming districts to tidewater ports. As such they were similar to the cotton-carrying lines of the Georgia-Carolina area.

Differences between the state and private networks were found by Meinig to be in some respects striking, with the main contrast in duplicate routes and duplicate services. In the Columbia basin the links between inland exporting centers and tidewater ports were found to be commonly duplicated with the exporter faced with a choice of competitive services to different tidewater ports. There was complete absence of such alternatives in South Australia. Moreover the hinterlands of individual lines in South Australia remained more stable in contrast to the piracy and "invasion of territories" in the Columbia basin. The Columbia basin rapidly developed a uniform gauge while the South Australia system retained its relatively watertight hinterlands, each served by its own gauge. The relationship between the Columbia basin and the Georgia-South Carolina networks, and between the North Carolina and South Australia systems seems to be fairly close.

The influence of political boundaries on the transportation network of Georgia and the Carolinas in Phase 3 was a considerable factor in the arrangement of the transport network. Besides establishing gauge differential obstacles to traffic coordination, states and cities frequently refused through passage to lines, thus hindering the flow of traffic to their advantage. Hoover, in a

lengthy account of the influence of political boundaries as trade barriers, came to the conclusion that

> Trade barriers of various sorts are often erected at political boundaries as part of an effort to influence location. Even in the absence of such policies, however, trade across boundaries is ordinarily slower, more complicated, more roundabout, and therefore more costly (Hoover, 1948, 225).

One interesting feature of the development of the first railroads in Georgia and the Carolinas is that they were generally diagonal rather than perpendicular to the coast baseline. The main ports were fairly well assured of the trade which came to them down their own or adjacent rivers. Their main desire was to cut into the trade of the rivers carrying produce to other ports. Thus Wilmington, long before it was connected by rail to Fayetteville, had established branches to intersect the Roanoke, Tar, Neuse, and Peedee. Charleston built the first of all Southeastern railroads to siphon the Savannah River trade, while Savannah also built westward to bring the Oconee and Ocmulgee directly within its sphere of influence.

Such diagonal lines do not fit the third stage of the Taaffe model, unless they are considered to be feeders to the ports and penetration lines. The period of railroads as feeders quickly gave way to a period when railroads were aligned along the traditional penetration lines. The railroad expansion pattern of Phase 3 in Georgia and the Carolinas is thus perhaps best viewed through the per-

spective of spatial reorganization elaborated by Janelle. He proposed a

> concept of relative advantage [which] states that the process of spatial reorganization in the form of centralization and specialization will accelerate most rapidly at those places which stand to benefit most from increasing accessibility. In other words, transport innovations are most likely between those places which will benefit most from a lessening of the expenditure of time (cost or effort) to attain needed and desirable goods and services (Janelle, 1969, 357).

According to this concept the diagonal feeder rail routes would have been expected to develop earlier than the perpendicular rail routes because the latter were already being well served by the steamboats. Largely it was the break-of-bulk problem on the river routes which caused those routes to get rail lines eventually.

Immediately after their construction, the rail lines began to affect the growth of the towns which became route foci. Macon subdued Milledgeville, Columbia began to emerge considerably above Camden and Cheraw, and Raleigh dominated Smithfield and threatened Fayetteville. Fayetteville was the most prominent of the North Carolina Fall Line towns before 1840, but its growth after that time, without a railroad advantage, was sporadic (Table 1). The main port cities which largely controlled railroad construction, particularly in Georgia and South Carolina, were able to extend their trade areas to cover large portions of each state. By the end of Phase 3 there were only three ports of any significance on the Georgia-Carolina coast -- Savannah, Charleston, and Wilmington.

Phase 4

Of the four phases of the Taaffe model, the one which most apparently parallels its equivalent stage in the Georgia-Carolina sequence is the fourth phase. In this final phase, according to Taaffe, Morrill, and Gould, there is an emergence of a few specific routes. These become the main traffic arteries of the region, stimulate the growth of the major regional population centers, and engage in interregional as well as intraregional trade. In West Africa these "main streets," or "high-priority linkages," were characterized by major roads. In Georgia and the Carolinas in the late nineteenth century the "main streets" were characterized by railroads.

By changing their emphasis from local carriage in Phase 3 to long-distance haulage in Phase 4, the railroads became the main agents of spatial reorganization. This was particularly the case because they shifted traffic from routes predominantly perpendicular to the coast in Phase 3 to routes predominantly parallel to the coast in Phase 4. This reorientation developed due to the competition between the railroads and the coastal steamship lines for interregional traffic between the Southeast and the Northeast. From Phase 1 to Phase 3 the steamship lines had managed to maintain the cheapest freight rates. By the late nineteenth century, however, developments in railroad technology and contiguity made overland transfer

charges competitive with coastal shipping rates. One distinct result of the shift of traffic from coasting vessels to the railroads, was the by-passing of some of the major ports by the major traffic lines. A second result was the reemergence of the Fall Line and mountain fringe routes as the main corridors of traffic flow and urbanization.

The most noteworthy aspect of the development of the "main streets" of Phase 4 was their reliance upon old established traffic lines dating back to the Colonial Period. Wherever possible the new trunk routes had reduced the costs of their formation by purchasing established lines lying in the direction in which they wished to expand. Only when there were missing links, or where they were shut out of contention for an existing line by the purchasing power of a competitor, did they build new lines. Even then, except for the Atlanta to Monroe section of the Seaboard, the new links were relatively short. In its extension from Danville to Birmingham, Alabama, for example, the Richmond and Danville built only two stretches of line -- the Piedmont, and the Georgia Pacific. The two long lines of the extension -- the Atlanta and Charlotte, and the North Carolina -- were acquired. Other trunk lines were formed in similar fashion, and were therefore less direct in their orientation between major cities than they might have been had they been comprised entirely of virgin construction.

The significance of long-lived transportation lines to urban development, through the production of "urbanized corridors," has been shown by Whebell (1969) using Canadian evidence. Taking the area of Southern Ontario, Whebell was able to show the preservation of aboriginal routes through five stages of economic development: 1) subsistence agriculture, 2) commercial exchange, 3) rail transport dominance, 4) the early automobile period, and 5) rapid transit and metropolitanism (Whebell, 1969, 5-26). The idea is not a new one. Truett (1935) was concerned to show the common adoption of Indian trails by road makers in Georgia and the Carolinas.

Logan in South Carolina before the Civil War remarked that

> The enterprise and progress of the present age have developed a fact in relation to the ancient Indian trading paths of Carolina, that is too remarkable to be omitted here; though we have never seen it noted by anyone. Nearly the entire railway system of the State has been constructed almost precisely on the routes of the old peltry trails of her infant commerce. The South Carolina Road passes between Charleston and Augusta, over the line of the great Chickasaw and Creek path; the Greenville and Columbia along that of the Cherokees; and the Carolina and Charlotte pursues, on the ridge between the Broad and Catawba Rivers, with no less fidelity, the old path that led from the Catawbas to the Congarees. But the correspondence does not cease here; one of the first railway enterprises in the State of Georgia was to construct, from Augusta, a continuation of the line completed in Carolina, over the Chickasaw and Creek trail; and but recently, Charleston has been rejoicing at her betrothal, by a tie of the iron rail, to the same prolific region, and in the main, over the same route,

> in the completion of the Memphis and Charleston Railroad, from which, a hundred and thirty years ago, she was accustomed to receive, on the backs of pack horses, the bulk of her exports. The great enterprise of the Blue Ridge Railroad, is only a continuation, by rail, of the ancient extension of the Keowee path from the site of Fort Prince George, across the mountains to the Over-hill settlements . . . and the long projected Savannah Valley Road [runs] over the route of the old Savannah, or Isandiga Trail, which connected Augusta with the Lower Cherokee Towns. . . . (Logan, 1859, 326-327)

The appearance of urban corridors or "main streets" during the fourth phase of a transport network would therefore seem to be due to two elements. One, the historical factor just discussed, is responsible for the perpetuation of a particular topographic alignment due to the inertia of invested capital and the initial advantages of early town locations which tend towards self-preservation. The second relates to advantages associated with the connectivity of various parts of the transportation system. The concept of connectivity and its significance for producing urban hierarchies has been well-explained in terms of the airline service pattern of India by Reed:

> By acting as a focus or junction point to facilitate or control the flows generated by other activities, any given activity provides a certain degree of connectivity to a system. A concept of metropolitan dominance theory is used in determining this degree of connectivity. Ecologists hold that dominance is reflected in the ability of a unit or organization to control the conditions under which other units or organizations must exist. An activity would appear to be dominant if it controls the communication flows of other activities in the system. In a hierarchy of control the

> specialization of this activity would clearly be greater than that of the activities of domination. By providing this flow control, cities dominate each other through their activities. A hierarchy of such connectivity can be identified (Reed, 1970, 773).

Connectivity therefore is a basic expression of the relationships between intercity routes in a transport network and between the nodes or cities of that network. This means that certain cities at favored points grow because of this control over, or access to, transportation routes. As the cities grow they attract or induce further transportation routes, thus strengthening their connectivity in the network and stimulating urban growth along the intercity transport lines through functions which wish to obtain or share connectivity. The result is a circular process of urban transport growth resulting in the emergence of "main streets" or urban corridors, as indicated in Phase 4 of the Taaffe model.

The process of progressive concentration of transport lines and urban growth over time has been summarized by Pred:

> The appearance of heavy traffic on an existing or new route (path of movement) generates more facilities (feeders, parallel road lanes or railroad tracks, etc.) and/or better carrier service (more frequent connections, greater carrying capacity), scale economies (cheaper transport inputs vis-à-vis other routes and/or time-cost savings), and newly implemented location decisions (sales or purchasing opportunities) adjacent or proximate to the route and its old or new feeders. Paralleling all this, there is a generation of information biases regarding the existence and cost (time) of reaching new and old opportunities

> associated with the route that discourage interaction with, and the survival of, other opportunities requiring greater costs (time) to reach. As a consequence, traffic on the route and its feeders is increased, with another round of more facilities and/or service, scale economies, newly located opportunities, and information biases that lead to more traffic and yet another round, etc. Thus sooner or later, there is a relative (if not an absolute) decrease in excessively costly or dissatisfying interacting dyads involving opportunities that are associated with now further disfavored or initially disfavored routes (Pred, 1969, 134-135).

The best example of this process in action in the Georgia-Carolina area was the beginning of the formation of the piedmont urban-industrial crescent, or corridor, along the mountain fringe of the Carolinas. Textile and furniture industries flocked to this routeway during the late nineteenth century (Collins, 1956; Griffin, 1958 and 1964; Griffin and Standard, 1967). Partly they came because of cheap labor and electric power supplies. Specifically, however, their locational decisions reflected the connectivity and accessibility characteristics of the Southern Railway line (Chapin and Weiss, 1962, 8-13).

The main question, related to high-priority linkages in the transport expansion process, has been concerned less with the actual presence of linkages than with the timing of their appearance. According to Taaffe, Morrill, and Gould, the main-street lines appear only after the emergence of major nodes, and after the system has become interconnected over its whole area. Stanley (1970) claimed that a high-priority linkage was observed in Liberia before

the completion of interconnection. Burghardt suggested that, in the light of his Ontario study, "these linkages develop concurrently with, not notably after, the rise of the more important centers." (Burghardt, 1969, 439.) There is general agreement by researchers, however, that a form of main-line or high-priority linkage eventually appears in an emerging transport network.

General Adequacy of the Taaffe Model

Discussion of the Georgia-Carolina transport sequence, in terms of the Taaffe postulates, and with reference to related empirical research performed elsewhere by others, suggests that the precise transport sequence proposed by Taaffe, Morrill, and Gould is not universally relevant with respect to developing areas. There appears to be three reasons why the Taaffe model has not been found representative of all colonial situations. One relates to the scale of the various areas in which the transport sequence has been studied. A second derives from the varying lengths of time over which the colonial process has operated from place to place. The third concerns the differing nature of the colonial process from place to place.

The search for direct parallels is limited to some extent by the differing environments of the widely separated regions in which transport expansion research has been undertaken. Both space and time dimensions adopted

by the various students of colonial transport-development sequences are far from standard. Areally the scales range from the Niagara Peninsula of Canada to the countries of Australia and New Zealand. It is likely, therefore, that the detailed analysis of one study may not be feasible in a second, and that conclusions need not necessarily have been drawn at the same level of generalization from one study to another.

Individual studies have also tended to adopt, for a variety of reasons, differing time perspectives. As has been evident throughout this study, technological innovations are important contributors to any transportation pattern. The impact of such innovations, with respect to transport networks, has been largely an expression of time-space variations in world economic development. Regions settled by Europeans at an early date were subject to the European technology of that period. Regions exploited in more recent times were not necessarily exposed to the old technology to the same extent, and were not, therefore, so markedly conditioned by it.

The exposure or lack of exposure of territories to particular innovations, therefore, become important considerations in research operations. As a result the "older" the colonized surface under study, and the longer the period of analysis, the greater the likelihood would seem to be of recognition of definite and multiple stages of development. At the same time it seems highly unlikely

that, other than by coincidence, the same set of stages is universally characteristic. The Taaffe model, for example, concerns transport developments in West Africa after the arrival of Europeans in the fifteenth and sixteenth centuries, but its second phase only becomes operative after 1900. The Georgia-Carolina sequence began in 1670 with a proposed second phase beginning by 1750. Other time spans have been considered with respect to other places.

It seems improbable that widely differing areas, over widely differing time periods, would evidence a closely similar four-stage transport sequence. Nor is it to be expected that duplicate developments should occur in West Africa, Australia, Canada, and the United States simply because both were recently colonized by Europeans from the sea. Some allowances must be made for initial differences in the colonized surfaces which are likely to remain in the pattern of settlement, to some degree, in perpetuity. Also differences in the actual objectives of colonization affect the pattern of urban-transport expansion from place to place.

In the Georgia-Carolina sequence, as in the Taaffe model, the territory is a seaboard situation colonized primarily from the sea. In the former case, however, exploration, after a brief initial period, is determined directly by domestic decisionmaking and not by external imperial influences. Also the Georgia-Carolina sequence concerns the development of an interior agricultural

territory and its settlement by Europeans. This situation is quite different from the normal pattern of colonization in West Africa, where only limited local interior areas were desired transportation objectives troughout most of the development period. Because of the quite different nature of the settlement process associated with colonization in West Africa and the United States, it is perhaps advisable to consider the Southeast as a "colonial" situation only in the earliest years of its settlement.

An Alternative Model

If Georgia-Carolina is not viewed as a colonial area in the West African sense, then it is possible that it represents a typical sequence of a different variety to that proposed by Taaffe and associates. The only attempt known to this author to establish a transport sequence such as that developed by Taaffe, for a noncolonial area, is that of Lachene (1965). Lachene's model was formulated as

> the result of practical surveys of the geographical distribution of certain activities in France with particular reference to the causes for the concentration of such activities in Paris, and the difficulties encountered in connection with developing similar activities in other towns (Lachene, 1965, 183).

Lachene makes no claims of general applicability for his model, stating that it

> can be only of limited interest as regards

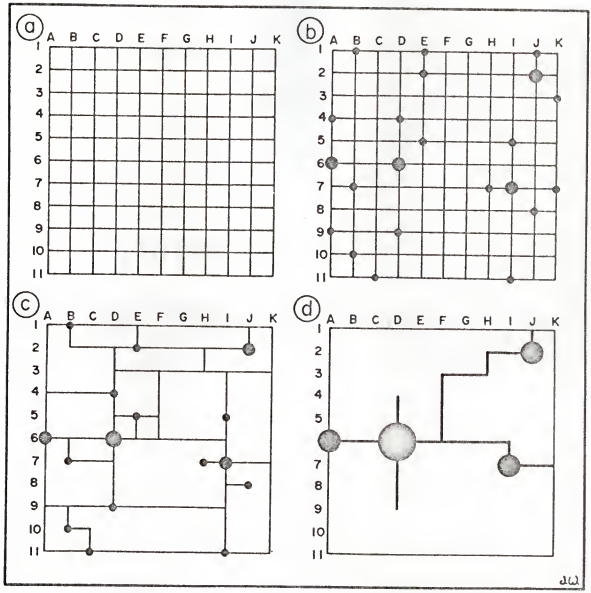
> areas which are not characterized by the existence of an outstanding centre of population and activity which eclipses all others, as is the case with France (Lachene, 1965, 183).

He points out, however, that such an occurrence is fairly commonplace, citing London, Copenhagen, and Athens as other European examples of the intense concentration of economic activity at one point (Atlanta provides a similar situation in the Southeast). From his observations of the French experience, Lachene postulates four recognizable stages or periods of regional transport development.

The initial period (Fig. 32, a) is characterized by a sparsely populated territory, where economic activity is fairly uniform. There is little trade, and in the place of a proper transport network there are merely tracks. The economic potential is practically the same throughout the territory and growing slowly. At the end of the first stage the first transport network is created, consisting of simple roads. This network does not demand a great deal of capital, and its carrying capacity is small. Quantitatively, therefore, a great number of links are created, and practically all the villages of the territory are touched by the network. The development of the network continues, and towns begin to appear at some of the intersections (Fig. 32, b).

Lachene specifies no reasons for these individual emergences but says the reasons for the choice of such intersections ought to be studied. He suggests that some

Figure 32. Stages in the development of a transportation network according to Lachene (adopted from Lachene, 1965, 194).


a
A B C D E F G H I J K
1 2 3 4 5 6 7 8 9 10 11
b
A B C D E F G H I J K
1 2 3 4 5 6 7 8 9 10 11
c
A B C D E F G H I J K
1 2 3 4 5 6 7 8 9 10 11
d
A B C D E F G H I J K
1 2 3 4 5 7 8 9 10 11

of them may already have a somewhat higher potential than the others, or that irrational decisions may be responsible for their growth. All intersections do not produce towns. Four towns-- A6, D6, I7, and J2 -- acquire a preeminence. Town A6, which is peripheral, owes its preeminence to its position as a bridgehead for trade with the outside world. The parallel to Charleston is noteworthy.

At the end of this stage the general development of the territory and the evolution of transport techniques make it possible to create a transport network of a new type such as railroads. This is characterized by greater capacity and higher capital expenditures than was the case with the former system. In order to reduce capital investment, and also because the former network is sufficient for traffic on most routes, the new network is set up only between a limited number of towns (Fig. 32, c). The decision as to which towns shall be included in effect also determines which towns will be destined to grow.

The creation of this third stage improves the potential of all the points in the territory, but particularly that of points A6, D6, I7, and J2. The disparity in potentials is accentuated with the result that towns A6, D6, I7, and J2 grow even more rapidly. thus absorbing practically all the growth in the territory. When a third network, such as super highways, is created the only towns which can conceivably be joined up by this network are

these same towns. In this final stage (Fig. 32, d) Lachene invokes governmental regional planning decisions for the development of stronger links around one town, B6. This assures its dominant position, and a metropolis such as Atlanta comes into being. At the same time many communities in the region suffer an economic drain and grow only slowly or decline.

The basic difference between the Lachene and the Georgia-Carolina sequences lies in the initial environment considered rather than in the mechanisms of network growth. Lachene conceives at the outset a "mid-continental" situation with a sparsely populated territory and fairly uniform economic activity. The Georgia-Carolina sequence derives from a coastal situation in which colonial exploration proceeds inland from the coastal baseline and where, in the early years, there is a massive imbalance between the coast and the interior in terms of economic activity.

Apart from this initial distinction, however, the elements of development suggested in the Lachene model closely approximate the pattern of events noted in the previous chapter. These similarities are masked somewhat by the differing "four stage" structures of the Lachene model and the Georgia-Carolina sequence. There are two reasons for this. One concerns the characteristics of the early Colonial Period which separate the overall period of development of a low-order integrated road

network into two parts in Georgia and the Carolinas. The lack of a "colonial" period in France allows Lachene to view the same period of development as one stage.

The second reason lies in Lachene's incorporation of twentieth century developments into his model. To obtain his fourth stage Lachene cites the super highway as the main conditioner of urban growth. If the Georgia-Carolina study had been extended to the 1960's the Interstate Highway System would have provided this further stage. It is interesting to note the relationship between the contemporary Interstate Highway System routes in Georgia and the Carolinas and the pattern of trunk railroad lines which had emerged by 1900. I-85 closely parallels the mountain fringe route of the Southern Railway. I-95 aligns closely with the main lines of the Seaboard and Atlantic Coast Line Railroads (now the Seaboard Coast Line) between Florida and Virginia. I-20 in part follows the Southern Railway between Birmingham and Atlanta, and then follows the Georgia Railroad route to Augusta and Columbia. I-75 parallels closely the old Atlantic and Western route from Chattanooga to Atlanta and the Macon and Western route to Macon. From Macon I-16 runs, as does the Central of Georgia to Savannah. It is perhaps also worth mentioning that I-85, I-20, and I-26 follow closely old Indian path lines.

When the structural differences are reconciled, the similarities between the Georgia-Carolina and Lachene

sequences are certainly more striking than their contradictions. In fact Lachene's summary of development in France could, after the coast-settlement period, substitute almost verbatim for the evolution of the Georgia-Carolina network. The only significant change would be the need to refer to a higher stage of development in Phase 4 of the Georgia-Carolina sequence, rather than the institution of a highway network suggested by Lachene for his third stage.

Conclusion: The Utility of Transport Sequence Models

There is evidence, from the Georgia-Carolina transportation sequence, that the Taaffe and Lachene models to some extent explain the formation of those urban centers which absorb much of the economic growth of a developing territory. They suggest, in Lachene's words, that

> the development of transport accentuates concentration, for it is only economically possible between a decreasing number of points. In other words, if we observe historical evolution over the long run, the minimum and optimum capacities of transport means have, as a result of technical progress, increased much more rapidly than operating costs. It has therefore become necessary from an economic point of view to concentrate traffic on the favoured lines and thus adopt the location of installations to them. It would seem that only technical innovations of a revolutionary character, such as ensuing at an acceptable price "isotropic" transport of persons and goods (e.g. by helicopter), are likely to arrest this trend (Lachene, 1965, 195).

In a general sense, therefore, the utility of transport sequence models as a planning tool is difficult to dispute. Such models make it possible to compare the influence of the layout of various networks on the spatial distribution of economic growth. This in turn should make it possible to discover 1) whether there are critical types of layout which confer an excessive advantage to certain points -- the route center or centers of the region -- by bringing about an irreversible, cumulative process of growth at those points and a saturation of the transport networks serving them, and 2) what networks might be involved to reverse a trend toward concentration and centralization, should such a reversal be considered desirable.

In the more specific sense of structural details, however, it appears that each of the major models of transport evolution (Taaffe, 1963; Lachene, 1965) fails to explain adequately the overall evolution of one individual transport network, that of Georgia and the Carollinas. The Taaffe model on the surface seems to have advantages, in that it is based upon a seaboard-to-interior expansion process, which is quite clearly characteristic of Georgia and the Carolinas during the early period of settlement. Its weaknesses lie in its poor initial differentiation of ports and penetration lines, its neglect of the number of penetration lines likely to be developed in an interior agricultural settlement

situation with high productivity and a need for external markets, and its failure to allow for traffic aligned parallel to the coast at an early date.

The Lachene model has the disadvantage common to central-place models of assuming an initially evenly populated territory. It also has the disadvantage, in comparison with the Georgia-Carolina sequence, of out-of-phase stages of development. On the other hand, its general sequence of development closely approximates that in Georgia and the Carolinas. It has the advantage of permitting the differential evolution of coastal ports at an early date, and it predicts the evolution of "gateway" cities such as Atlanta and Charleston. The significance of the gateway city in evolving urban patterns has been discussed by Whebell (1969, 5) and at greater length by Burghardt (1971).

In spite of differences in detail, which destroy their absolute universality, both the Taaffe and Lachene models have a number of elements in common suggesting, perhaps, that they should not be summarily dismissed as being only of parochial significance. In terms of its overall spatial regularities, for example, the Georgia-Carolina sequence can be viewed as a combination of elements from both the Taaffe and Lachene models. A structure incorporating some characteristics of the early stages of the Taaffe model with some characteristics of the later stages of the Lachene model would seem to express best the Georgia-Carolina experience.

Similarly, differences noted between the Taaffe model and the evidence of other studies were primarily of degree rather than kind. This seems to indicate that there may be justification for conceptualizing certain general elements of the Taaffe and Lachene models as belonging to a universal process of transport expansion and urban development, yet to be fully outlined. The answer to Haggett's question, concerning the applicability of the Taaffe model outside West Africa, stated in Chapter 1, has to be that in terms of specifics the model does not pass the test of the Georgia-Carolina case. In fairness to Taaffe, Morrill, and Gould, however, it seems necessary to state that the general elements of their model have considerable significance with respect to the Georgia-Carolina sequence.

The answer to Haggett's second question about the Taaffe model, concerning the validity of the four-stage breakdown of the development process, seems to be more definite. In retrospect the attempt to establish temporal regularities by the division of the transport expansion process into phases (which is common to both the Taaffe and Lachene models, and was used in the Georgia study) appears to have little utility for typical or general models. Taaffe, Morrill, and Gould, perhaps, suspected this when they wrote:

> It is probably most realistic to think of the entire sequence as a process rather than a series of discrete historical stages. Thus

> at a given point in time a country's total transport pattern may show evidence of all the phases. Lateral interconnections may be going on in one region at the same time that new penetration lines are developing in another (Taaffe, Morrill, and Gould, 1963, 505).

Certainly the models are more easily equated if the four-phase divisions are eliminated and the reality of the continuity of the transport expansion process is better appreciated.

It is, after all, the spatial aspect of transport progress with respect to urban development which is being explored by geographic studies, and not primarily the dates and rates of its specific events. Stages and phases are, perhaps, valid as concepts when used to describe a history of unique events, but in such histories the lawfulness or generality of process is easily missed. As Curry has said,

> Whether history is lawful is a matter for those who write it to decide. That spatial processes occur, to which the historian could not contribute understanding but which are the very stuff of geography, appears self-evident . . . or at least a worthy article of faith (Curry, 1964, 146).

This study has certainly not established any laws of history as a result of its four-stage analysis of the Georgia-Carolina transport sequence. It has, hopefully, by its discussion of transport expansion in that area from the geographic viewpoint, increased knowledge concerning the spatial dimensions of that process. Only with such knowledge can "general" or "typical" geographic concepts

of urban and transportation distributions be substantiated or qualified.

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BIOGRAPHICAL SKETCH

David Charles Weaver was born December 27, 1942, at Dudley, England. He attended Tipton Grammar School and the University of Manchester, England, from which he received the degree of B.A.(Hons.) in June, 1964. In July, 1964, he was awarded a Fulbright travel grant for further education in the United States.

In September, 1964, he enrolled in the Graduate School of the University of Florida. He was employed as a Research Assistant in the Caribbean Studies Program, September, 1964-June, 1965; as a Teaching Assistant in the Department of Geography, September, 1965-June, 1966; and as a Graduate Assistant in the Department of Geography, September, 1966-August, 1967. In August, 1967, he was granted the degree of M.A. in Geography from the University of Florida.

In September, 1967, he returned to England, where he held the positions of Assistant Lecturer in Geography at the University of Manchester, September, 1967-June, 1968, and Lecturer in Geography at the University of Leicester, September, 1968-June, 1969. From September, 1969 to June, 1971, he held a Graduate Instructorship in the Department of Geography at the University of Florida, and since

September, 1970 has been employed as Assistant Professor in the Department of Geography at West Georgia College, Carrollton, Georgia.

David Charles Weaver is a member of the Association of American Geographers, the Institute of British Geographers, the National Council on Geographic Education, and the Geographical Association. He is married to the former Jan Lynn Smith and is the father of Keith Mark Weaver.

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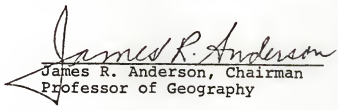

James R. Anderson, Chairman
Professor of Geography

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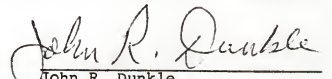

John R. Dunkle
Professor of Geography

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Clayton C. Curtis
Associate Professor of Real Estate and Urban Land Studies

This dissertation was submitted to the Department of Geography in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December, 1972

Dean, Graduate School